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SOAP

and Chemical Specialties

In this issue...

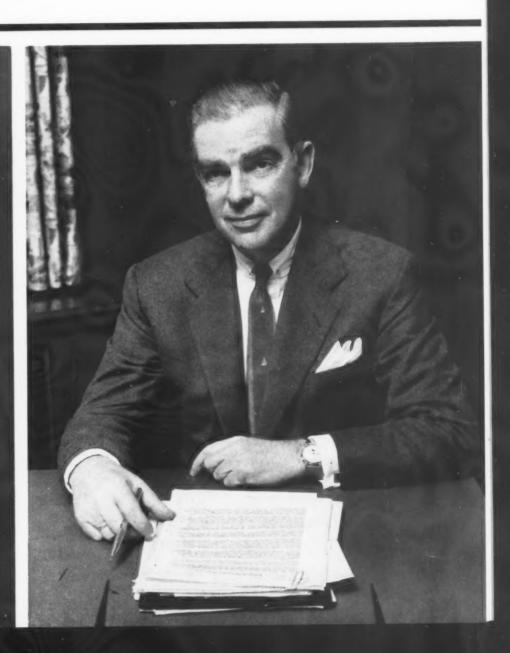
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1-85—new sanitizer d bleach ingredient

story, fresident of Economistory, Inc., St. Paul, chosen of Association of American B Glycerine Producers at exting in N.Y. last month.



SAVE up to 30%
on aerosol solvent
costs
with SOLVAY
METHYLENE
CHLORIDE

It's a fact! Solvay Methylene Chloride in your low-pressure formulations can save you up to 30%.

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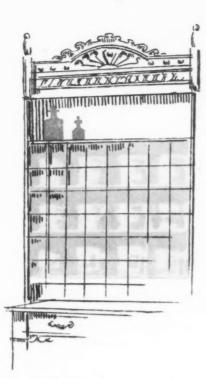
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A GUIDE TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE

SELF POLISHING WAXES

Candy's Supreme (standard)
Bright Beauty (standard)
Candy's Supreme Special WR

SUPER CAND-DOX®

CAND-DOX #CS

CAND-DOX #BB

Six floor waxes that are all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited,

Bright Beauty WAX REMOVER & All-Purpose SURFACE CLEANER

Properly used it will remove water-emulsion wax from any floor without harmful effects to floor or floor coloring. It is the perfect floor maintenance wax remover and all purpose surface cleaner. Pleasant odor, crystal clear and thorough cleaning action with all types of equipment. Is unaffected by hard freezing. Furnished ready for resale or in concentrated form for those who want to compound their own cleaner . . . nothing but water to buy or mix in.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits repeated repolishing with a dry cloth saving reapplication time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

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Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver without abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove...also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

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Really cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

An honest appraisal floor wax products as see it is offered to guide we buyers who want the best qual money can buy...

1. BEAUTY AND DURABILITY

should be considered together. Initial appear is important, but for a waxed surface to rebeautiful it must be durable. Durability depends on a surface to the abrasion of the but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durabis really measured by how long the waxed face maintains a nice appearance before necessity of complete removal and re-waxis.

2. ANTI SLIP

qualities are necessary in a good wax as enter of safety underfoot. This important quidoes not necessarily require the sacrification which are the form original reasons for the use of a wax, look the proper balance—a wax film which is excessively slippery yet which is not tacky does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering possibility of wet traffic and the necessify frequent damp mopping for the purpose with moving surface dirt. Overdoing this quality myreater difficulty in applying multiple collowax and may seriously increase the difficulty nemoval when complete cleaning and re-weight in the control of the c

4. SOLID CONTENT

when expressed in percentage is not need important as the quality of the solid cor. When considering good quality, 12% of some solid property of the solid cor. When considering good planned menance programs. Two applications of 12% give better results than one of 18%. How the more concentrated material is useful for programs of maintenance and particular "washed-out" floors, etc. Over-waxing shed avoided so that periodic complete removal not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient if floor waxes. When refined and compounded other important ingredients and "KNOW if it aids materially in producing the most imporfeatures of a good floor wax. ALL APP QUALITY OF PERFORMANCE.

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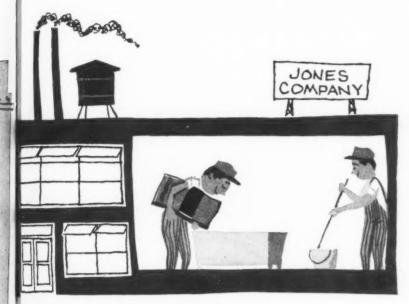


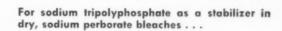
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for trisodium phosphate and tetrasodium pyrophosphate—the best formula for heavy-duty industrial cleaning jobs . . .

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We have a particular problem. If there's no obligation, please have technical service representatives call.

State_



In their brief but exciting history, chelating agents have encountered reactions ranging from scoffs and disbelief to overzealous exaggeration about their application. But the air is clearing. Already they are serving as important tools in many industrial processes. This is the beginning of a series on chelating agents designed to further clarify what they are, what they will do—and won't do.

The Chemistry of Chelation: Part I

Chelation defined · Example of the reaction · Variety of applications · Future of chelating agents

Polymerization of synthetic rubber controlled . . . soap kept white and sparkling on the dealer's shelf . . . textiles bleached and dyed with permanent uniform colors . . . pharmaceuticals stabilized. Unrelated reactions? Certainly. However, all are accomplished by a group of closely related chemicals called chelating agents. How do they work? Well, it's not magic, but chemistry—in a way, fairly basic chemistry. But let's begin at the beginning.

What Is Chelation?

Let's look at the word chelation. It is derived from the Greek word Kelos which means "claw." Simply stated, a chelate is a claw which holds a metallic ion inactive in solution. Chemically stated, chelation is a chemical reaction in which polyvalent metallic ions are reacted with organic reagents (chelating agents) to chemically inactivate these polyvalent metallic ions in the form of an extremely stable, water-soluble chelate.

Typical Reaction

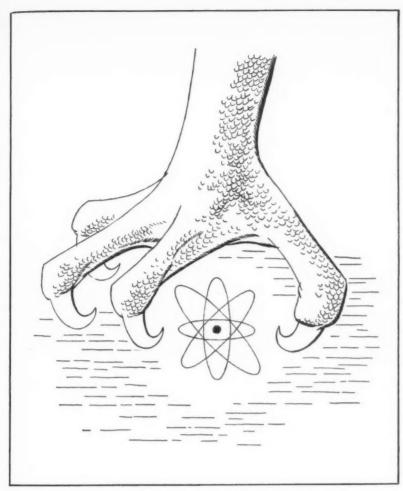
If we examine a typical reaction, the process of chelation becomes quite of the Dow chelating agents. clear. Let us take, for example, the

Versene

Now, if we place the Versene in a solution which contains free polyvalent is the result:

Versene Copper Chelate

The resultant compound is Versene become a member of an inner ring copper chelate. The copper ion has structure in the molecule. The result?



They can descale boilers, soften water and cure acute lead poisoning. The number of current industrial and medical applications is large, but the potential in unexplored areas is enormous.

And the Future?

The future of these products will hinge on the imagination and insight of chemists and engineers, of production men and purchasing agents, in nearly every industry. Wherever metal contamination poses a problem or wherever controlled introduction of metal ions is desirable, these chemicals warrant investigation.

Versene and other Dow chelating agents won't solve them all. Chelation is not a panacea. It will work chemically in some areas—it will fail in others. However, it is Dow's intention to assist in every way in the uncovering of processes in which chelating agents can be profitably used. Inquiries on your company letterhead will be handled with dispatch. We will be pleased to provide information and technical assistance. Write to Technical Service and Development, Dept. SC 900H, THE DOW CHEMICAL COMPANY, Midland, Michigan.

It is inactivated. It cannot react with soap to cause darkening and stain during storage.

It can't cause breakdown of pharmaceuticals. It can't cause any trouble anywhere because it is locked in the Versene claw. It will stay locked in unless it is desired to reverse the process. This reverse action is used in polymerization of synthetic rubber ions of iron being released at a predetermined rate by the chelate.

Variety of Applications

The most important thing, however, is that this "claw" property of chelating agents such as Versene makes it possible to solve a multitude of processing problems in industry. They've been used in tanning leather and tenderizing peas.

The next three topics in this series

PART II The Versene and Versenol® series of Dow chelating agents (what they are, strength and stability features—Versenol lower cost, less strength). Also—how chelating agents are specified (product performance versus chemical composition).

PART III Specific chelating agents for specific applications. Formulations of various kinds (dilute or concentrated agent depending on product—powdered form for solid cleaning compounds—Versene vs. Versenol for iron removal vs. softening water).

PART IV September Further discussion of the use of chelating agents in the formulation of cleaning compounds (production economies possible improvement of product: in appearance, in performance).

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To broaden the usefulness of NINEX 300 for these and other similar uses, NINOL research has developed new, improved manufacturing procedures which add greatly to NINEX 300's already attractive features. You can get a better product, and better production, with improved NINEX 300—with higher foam, greater viscosity, lighter color and mild odor.. and you get all of these advantages at low cost.

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for Safe ... Non-Slippery ... Self Polishing Beauty!

This new floor finishing treatment is everything its name—Gloss-Grip—implies. It combines beauty, long-wear, ease of application, and economy with perfect safety.

Gloss-Grip is a waxless floor finish that provides a traffic surface on all floors that is actually safer and more anti-slip than the original untreated surface. Because it contains no wax, Gloss-Grip is completely scuff-resistant.

Its film—much harder, much tougher, more wear-resistant than wax—requires no

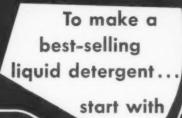
buffing, self-polishes to a glareless, mediumhigh lustre, and resists dirt and traffic marks.

It can be cleaned with a damp mop or by dry-cleaning with a soft-bristled brush under a buffing machine. When traffic lanes show wear, they can be refinished without evidence of lap marks.

Gloss-Grip, designed for use on all floor areas, is especially recommended for asphalt, rubber, and vinyl tile, and linoleum.

Samples and complete information sent upon request—without obligation, of course.





NEOLENE 400

intermediate for synthetic detergents

Throughout the nation, more and more homemakers are buying liquid detergent formulations in vast quantities—and sales figures are still growing. If you're a processor who is looking for an economical raw material that can mean much to you in profits and sales, consider NEOLENE 400.

This high-quality hydrocarbon is used by the world's largest producers of synthetic detergents. Sulfonates produced from NEOLENE 400 are well-suited for compounding in liquid formulations. Let us give you all the facts about NEOLENE 400 and its use as a detergent raw material. Samples sent on request. In addition to NEOLENE 400, you can count on Conoco for:

WATER-SOLUBLE SULFONATES produced from NEOLENE 400. Available as sulfonate slurry, sulfonic acid, or in spray-dried and drum-dried forms.

OIL-SOLUBLE SULFONATES manufactured by sulfonating synthetically produced hydrocarbon under closely controlled conditions.

CONOCO H-300, secondary plasticizer for vinyls—outstanding light stability... improved low-temperature flexibility . . . viscosity depressant and stabilizer.

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Dependable Source for Chemical Raw Materials



Wetalene's President W. J. Mangold bases his business on quality products.

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"Wyandotte's Pluronics help us keep our quality high"

- W. J. Mangold, president, Wetalene Laboratories, Inc., Columbus, Ohio

"We have to make quality products to meet competition," says W. J. Mangold, president of Wetalene Laboratories, Inc. "That's why we're constantly looking for ways to improve our quality.

"When Wyandotte introduced the Pluronics," we recognized in them a balance of properties that was not available in other surfactants. We thoroughly tested and evaluated those Pluronics that had the greatest potential for us.

"We found that in *Only-Wun*, our complete compound for automatic washers, the Pluronics gave us increased soil removal and whiteness retention, and enabled us to control the sudsing. The Pluronics also produced a more free-flowing product. In addition, we were able to eliminate some of the compounding operations required with our previous nonionic, with resultant labor and equipment savings.

"In addition to the Pluronics, we also use Wyandotte Kreelon* CD and Carbose.* We have found Wyandotte products quite compatible, not only with each other, but with all products compounded with them.

"We also appreciate the service behind these products. When we need additional materials, we can schedule our production on Wyandotte's word that the materials will be here."

Have you looked into the possibilities of the Pluronics in your business? The Pluronics have already been used successfully in many fields: viscose rayon and cellophane, metal cleaning, boiler descalants, mechanical dishwashing, and dye leveling — to name a few. Our experience in these and many other fields is at your command. Just write us, giving details of your expected applications. We'll send you pertinent data and samples for your evaluation. Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.

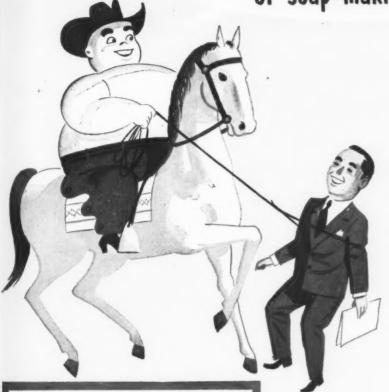


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Mr. fatty acid says:

He's headed for the best roundup of soap-making values



They're all reordering fatty acids

for clear liquid soaps with uniform color — batch after batch

You can always follow the market with the broad line of ADM Vegetable Fatty Acids

Type and Kind	lodine Number	Titer	Color (Gardner)	Acid Number
LINSEED FATTY ACIDS Water White Distilled Regular Distilled SM 500	180 Min. 157 Min. 152 Min.	19-23		
SOYA FATTY ACIDS Water White Distilled RO-10 RO-11-S	135 Min. 125 Min. 125 Min.	23-29		
MIXED VEGETABLE FATTY ACIDS RO-8	115 Min.	30 Max.	6-8	195-205
MISCELLANEOUS FATTY ACIDS Double Distilled Cottonseed Double Distilled Corn	95-110 105-120	32-38 28-32	8 Max. 8 Max.	

Average lbs. per gallon 7.5 Unsaponifiable—2% Max. on all acids

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• Are you finding competition in the soap business a little more brisk today? Then it's time to get acquainted with ADM's broad and complete line of vegetable fatty acids.

As the chart at the left shows, you can have your choice of nine specialized ADM fatty acids ideally suited to soap making. Therefore, whether your primary interest at the moment is economy, or easier processing, or higher quality, you can always find your "best buy" in ADM's linseed, soya, corn, cottonseed, or mixed fatty acids.

In addition to getting the most advantageous base price, you will find extra savings at ADM by combined purchasing. Order any combination of fatty acids and oils, in truckload, carload or tankcar shipments. Highest purity and unvarying uniformity are assured.

Want technical information and samples? Mail the coupon

ADM fatty acids

Archer-Daniels-Midland company



ARCHER-DANIELS-MIDLAND CO. 702 Investors Building, Minneapolis, Minnesota

Send fatty acid evaluation samples for the following uses:

-) SOAPS () RUBBER PROCESSING () MINERAL) LUBRICANTS () TEXTILE PROCESSING FLOTATION) INSECTICIDES () WAXES & POLISHES () PROTECTIVE COATINGS
- () Send technical bulletin describing ADM fatty acids for soapmaking.

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Increase your profits on re-packaged detergents!

It's simple arithmetic—buy D40 SF (flakes) by weight and sell it by volume. Because of D40 SF's low density it doesn't require as much product to fill your packages so your profits are increased. You will also find D-40 flakes firm and without the usual dustiness inherent in so many spray-dried materials.

D40 SF is readily soluble in hard or soft water, either hot or cold. It's free-flowing, provides maximum amount of foam and maintains foam stability in presence of grease. Being neutral, D-40 SF will not harm painted surfaces.

Packaged in either 70 lb. bags or 170 lb. drums for easy handling. Compare D-40 SF with the product you are now using. Just contact the Oronite office nearest you for samples and complete information.



D-40sF Showing bulk density of D-40 SF flakes— Oronite's alkyl aryl sulfonate.



BRAND X Showing bulk density of a typical competitive alkyl aryl sulfonate.



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After Closing . . .

Wrisley Buys Iowa Soap

Allen B. Wrisley Co., Chicago, has purchased Iowa Soap Co., Burlington, Ia., from Consolidated Foundries & Manufacturing Corp., Chicago, it was announced Feb. 2, by Wrisley B. Oleson, president of Wrisley. The acquisition includes land, buildings, equipment and good will. The business will continue to be operated as the Iowa Soap Division of Allen B. Wrisley Co. James Bolen, formerly vice-president of Iowa Soap Co., is supervising the Iowa Division. Mr. Bolen becomes a vice-president of Wrisley.

In announcing the purchase of Iowa, Mr. Oleson said it was his belief that "this acquisition will not only increase our basic facilities, but complement our operation by providing a separate division for development of industrial, bulk and special label soap business.

Iowa Soap Co. has been in operation since 1881 and makes such well known retail products as "Nola" soap flakes and "Magic Washer" granulated soap. Iowa also makes a range of soap products including toilet soap, household soaps, bulk flakes, glycerine and industrial soaps.

W. T. Haebler Dies

William T. Haebler, 55, vicepresident, treasurer and a director of van Ameringen-Haebler, Inc., New York, died Monday, Feb. 6 at St. Mary's Hospital, West Palm Beach, Fla., after a short illness.

Mr. Haebler long had served the cosmetic and perfume field in official capacities with the Toilet Goods Association and the Essential Oil Association. A member of the Chemists Club and Union League Club, Mr. Haebler was also executive vice-president and director of the Kurth Malting Co., Milwaukee, and a director of the Concord Fund.

He is survived by his wife, Mrs. Ethel Kurth Haebler; three daughters and a granddaughter. His



William T. Haebler

homes were at 60 Rockledge Drive, Pelham Manor, N. Y. and 9040 North Bayside Drive, Milwaukee.

P & G Report Earnings

Earnings by the Procter & Gamble Co., Cincinnati, for the six months ending December 31, 1955, amounted to \$30,771,379, equal to \$3.17 per share of common stock. Consolidated net profit for the same period in 1954 was \$31,946,760, equal to \$3.30 per share of common stock. In the current period, provision has been made for U.S. and foreign income taxes of \$30,459,000.

D-12 Committee Meeting

The 1956 annual meeting of committee D-12 on Soaps and other Detergents of the American Society for Testing Materials will be held on March 19th and 20th at the Hotel Park Sheraton in New York City, according to an announcement issued by J. C. Harris, Monsanto Chemical Co., Dayton, O. chairman and E. W. Colt, Armour & Co., Chicago, secretary. The program for the regular committee activities

and technical papers is now being prepared and will be mailed to members around Feb. 20th.

At the same time, it was announced that the A.S.T.M. Year Book is available and may be purchased at \$3.50 per copy by members of A.S.T.M. technical committees who are not members of the society.

DCAT Dinner Mar. 1

Sydney N. Stokes, chairman of the Drug, Chemical and Allied Trade Section of the New York Board of Trade, recently announced that more than 2,200 reservations have been received for the DCAT's annual dinner, Thursday evening, March 1, at the Waldorf-Astoria Hotel, New York.

At the same time Mr. Stokes also announced the following committee appointments:

Dinner Arrangements - Chairman: J. David Hayden, R. P. Scherer Corp.; vice-chairman: Griffin Crafts, J. W. Wilson Glass Co.; program chairman: Stanley I. Clark, Sterling Drug, Inc.; vice-chairman: Lloyd I, Volckening, Ivers-Lee Co.; honor guest chairman: W. Boyd O'Connor, Ayerst Laboratories Division, American Home Products Corp.; vice-chairmen: J. A. Singmaster, Jr., Monsanto Chemical Co.; W. J. Schieffelin, III, Schieffelin & Co.; publicity chairman: Dr. Charles E. Dutchess; vice-chairmen: Geo. H. Mc-Glynn, Magnus, Mabee & Reynard, Inc.; Frank F. Black; fellowship chairman: Ralph A. Clark, J. T. Baker Chemical Co.; vice-chairmen: James Day, Dow Chemical Co.; Wm. W. Huisking, Chas. L. Huisking & Co.; reception chairman: James G. Flanagan, S. B. Penick & Co.; vice-chairmen: Harold F. Cummings, Vitamerican Oil Corp.; Fred G. Singer, E. I. duPont de Nemours & Co.

Weithaus Hagen Director

J. C. Weithaus, vice-president of Calgon, Inc. household division, has been elected a director of Hagen Corp., Pittsburgh, according to an announcement by W. W. Hopwood, president of Hagen of which Calgon and Hall Laboratories are subsidiaries.

Mr. Weithaus joined Hagen in 1936 and manages the sales of Calgon retail products, which include Calgon water conditioner and Calgonite electric dishwasher detergent.

Mich. CAIA Names Morrison

The Chemical and Allied Industries Association of Michigan has elected M. Lorne Morrison, R. P. Scherer Corp., as president for 1956. The group also appointed J. Glen Hicks, Monsanto Chemical Co., as vice-president; William F. Harlton, Jr., Detroit Veterinary Supply Co., as treasurer; and Daniel F. Badley, Shell Chemical Co., as secretary.

Phosphate Price Change

An adjustment in less than carload prices on Monsanto Chemical Company produced sodium phosphates to bring about a standardized \$1 per hundredweight differential between bulk and LCL prices was announced recently by Tom K. Smith, Jr., Inorganic Chemicals Division director of marketing. This price, which became effective January 9th, makes no change in car or truck prices and has been made to compensate for added costs in handling less than carload orders.

New prices on less than carload (LCL) include the following: \$8.875 per hundredweight on sodium tripoly phosphate; \$8.525 on tetra sodium pyrophosphate; \$5.40 on trisodium phosphate crystalline; and \$9.70 on monosodium phosphate.

1956 BIMS Schedule

BIMS of Boston have announced their 1956 schedule of activities. These outings will include: Winter Party at the Weston Golf Club, Weston, Mass., Feb. 16th; Ladies Night at the Weston Golf Club, Apr. 14th; Golf outings at Weston Golf Club, June 28th, and the Nashua Country Club, Sept. 11th. The date and place for the August golf outing have not been set as yet.

P&G Safety Record

Miami Valley Laboratories, basic research laboratories of Procter & Gamble Co., Cincinnati, recently completed one million safe man-hours work, a record for the 420 workers who staff the laboratories. The one million man-hour figure means that no employee has lost time from work as a result of an accident for a period of more than 450 days. Procter & Gamble will present a safety flag to the employees and a celebration of the record is scheduled to be held soon.

Fels Fund Makes Grant

,A grant of \$200,000 has been made by the Samuel S. Fels Fund to the University of Pennsylvania's Institute of Local and State Government for construction of an addition to the Fels Center, the institute's building at 39th and Chesnut Sts., Philadelphia. The institute was founded in 1937 by the late Samuel S. Fels of Fels-Naptha Soap Co., Philadelphia.

New Rohm & Haas Unit

Rohm & Haas Co., Philadelphia, will begin construction later this year of a new warehouse and office building in Niles, Ill., a suburb of Chicago. The single building will house all of the firm's present Chicago facilities which now operate in rented quarters. The new warehouse and office is expected to be ready for occupancy before the end of this year.

W. R. Stevens Retires

William R. Stevens, assistant treasurer of Hercules Powder Co., Wilmington, Del., retired Jan. 31 after an association of 37 years with the firm. Mr. Stevens first joined Hercules in 1918 as a member of the credit department. Two years later he was named credit manager and was appointed assistant treasurer in 1941.

New Pex Products

Pex, Inc., St. Louis, recently developed two new products, a hydraulic dispenser for commercial dishwashing machines and a drum pump that is said to fit any size drum.

The Pex dispenser fits all dispensers, according to the manufacturer. It comes complete with fittings and installation instructions and is priced at \$11.50, F.O.B. from St. Louis.

The company's new drum pump may be used for any type of product, including: detergents, acids, oils and soaps. A single plunge of the pump dispenser yields one ounce of liquid. This product sells for \$1.95, F.O.B. from St. Louis. Pex, Inc., is headquartered at 612 East Clarence Ave., St. Louis 15.

Clark Succeeds Robitschek

Robert J. Clark has been appointed merchandising manager of the soap division of Colgate-Palmolive Co. to succeed F. O. Robitschek who resigned to become presi-

Robert J. Clark



dent and chief executive officer of the Onyx Oil & Chemical Co., Jersey City, N.J. Robert M. Smith was named to succeed Mr. Clark as manager of the new products department of the soap division.

Robert Smith



SOAP and CHEMICAL SPECIALTIES

Hooker, Moffitt Advance

Hooker Electrochemical Co., Niagara Falls, N. Y., has named Thomas E. Moffitt executive vicepresident, and R. Wolcott Hooker,



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T. E. Moffitt

R. W. Hooker

senior vice-president, it was announced recently by Bjarne Klaussen, president of Hooker. Mr. Moffitt previously had been vice-president in charge of western operations, while Mr. Hooker had formerly served as vice-president, director and member of the finance committee for the firm.

Mr. Moffitt first joined Hooker in 1930 as assistant western sales manager at Tacoma. He left the company in 1945 but returned five years later as assistant works manager of the Tacoma plant. In 1946 he was named Tacoma works manager and in 1952, western manager. Then, in 1954, he was appointed vice-president in charge of western operations. Mr. Moffitt plans to move east with his family from his Tacoma headquarters to Hooker's main offices at Niagara Falls.

The appointment of Mr. Hooker marks the latest step forward in a career that started with the firm in 1922 when he joined Hooker as a salesman in the small package division. He became assistant sales manager in 1935, a director in 1937, vice-president in charge of sales in 1941 and vice-president in charge of purchasing and public relations in 1953.

C-S Ohio Expansion

Columbia-Southern Chemical Corp., Pittsburgh, has completed plans for extensive expansion of research and development at the company's Barberton, O. plant, according to a recent announcement by

Joseph A. Neubauer, vice-president and technical director for the company. The program will cost in excess of a million dollars and will include the construction of a research building.

The new research unit, containing about 40,000 square feet of floor space, will be located adjacent to the company's chemical manufacturing facilities at Barberton. It will have three floors plus a basement and will include a library and conference room in addition to laboratories and offices. The new unit is scheduled for completion early next year.

Form Diversey-France

Diversey Corp., Chicago, has announced the formation of a new foreign manufacturing and sales subsidiary. The new company, Diversey-France, has started operations from its main office in Paris, according to H. W. Kochs, Diversey chairman. Diversey-France will use the manufacturing facilities of other French firms until its own plant is completed. Technical and sales personnel have already been sent to France to begin the training of a French staff. Diversey will sell its sanitation products principally to breweries, cheese plants, wine making and canning establishments.

The company recently announced the formation of Industrias Consolidadas of Caracas, Venezuela. Diversey also has plants in Australia, Canada, Hawaii, Newfoundland, and four in the U. S.

— * — Diamond Advances Dupont

George V. Dupont has been promoted to general manager of Diamond Black Leaf Co., Cleveland, it was announced recently by Loren P. Scoville, president. Mr. Dupont succeeds John W. Kennady, who has been named sales manager of agricultural chemicals for Diamond Alkali Co. The new general manager formerly was manager of manufacturing operations for Diamond Black Leaf. He joined Diamond Alkali in 1940 and has since served the firm in a number of engineering capacities.

Sherman Named Colgate VP

Stuart Sherman, director of advertising, Colgate-Palmolive Co., Jersey City, N. J., recently was



Stuart Sherman

elected as vice-president in charge of advertising. He has been a director of Colgate and a member of its executive committee since 1948 and will continue to hold these posts in addition to directing the firm's advertising program.

D&O Names Janovsky

Harold L. Janovsky has been appointed director of the flavor division of Dodge & Olcott, Inc., New York, N. Y., it was recently announced. Mr. Janovsky will work from the company's executive offices in New York.

Mr. Janovsky has been associated with Aroscent, Inc., Seeley & Co., Inc., and was technical director of Virginia Dare Extract Co., for five years before joining Dodge & Olcott. He is a member of the American Chemical Society, Institute of Food Technologists, Society of Flavor Chemists and the Flavoring Extract Manufacturers Association of the U. S.

Wiese Joins Glyco

Robert C. Wiese was named recently as a member of the technical sales department of Glyco Products Co., New York. Mr. Wiese has been assigned to the Chicago district office and will assist in covering northern Illinois, Wisconsin and Minnesota for Glyco.

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TGA Sets Meeting Dates

Dates for the spring and winter meetings of the scientific section of the Toilet Goods Association were recently announced for the years 1956 through 1959. The T.G.A. spring meetings are scheduled for May 17, 1956; May 9, 1957; and May 15, 1958, while the group's winter meetings will be held Dec. 12, 1956; Dec. 9, 1957; Dec. 8, 1958; and Dec. 7, 1959.

Barth Twin City Prez

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Clifford Barth, Merchants Chemical Co., Minneapolis, was recently elected president of the Twin Cities Chemical & Allied Trades Association, Inc. Also elected were Norman Anderson, Hawkins Chemical Co., vice-president; Bruce Heimark, Dow Chemical Co., secretary; and Jack Hess, Minnesota Mining & Manufacturing Co., treasurer. The balance of the board of directors consists of Ted Moore, Dow Chemical Co., and Barney Ringsrud, Great Stuff Prod. Co., program chairmen; Harold Hopp, Owens-Illinois Glass Co., membership chairman; Ted Wamsted, Mallinckrodt Chemical Co., and John Douglas, Lithium Corporation of America, entertainment chairmen; Sidney Lankester, Diamond Alkali Corp., finance chairman; and Norman P. Anderson, publicity chair-

The organization is now in its third year and has a member-ship of over 100.

Antara Names Rimlinger

Alfred P. Rimlinger has been appointed export manager of Antara Chemicals Division of General Aniline & Film Corp., New York, according to a recent announcement by Dr. F. M. Meigs, manager of foreign operations for the company.

A native New Yorker, Mr. Rimlinger attended St. John's University where he majored in business administration. He first joined General Aniline in 1936, and has been assistant export manager for dyestuffs since 1942 after having served as import manager. Mr.

Rimlinger succeeds Paul F. Hand, who was recently appointed assistant to the president of General Aniline & Film Corp.

New DHA Source

Aceto Chemical Co., Flushing, N. Y., has recently announced the availability of dehydroacetic acid which is manufactured by British Industrial Solvents of England and will be destributed by Aceto. The chemical is a substituted pyran, which appears to be useful in inhibiting the growth of bacteria and fungi, and should find application in cosmetics, toothpastes, ointments and other industrial products requiring preservation.

C-S Names Ballard

C. K. Ballard has been appointed district sales manager for the newly-established Houston district sales office, it was recently announced by Chris F. Bingham, vice-president in charge of sales for Columbia-Southern Chemical Corp., Pittsburgh. W. J. Bramblett will serve as assistant district sales manager of the new office. Previously the Houston area was serviced through a branch of the Dallas district office.

Mr. Ballard is a native of Texas and joined Columbia-Southern in 1934, following his graduation from Texas College of Arts and Industries. After eight years in various management capacities, Mr. Ballard was named chief process design engineer at the Lake Charles, La., plant. He was works manager at the Louisiana plant for six years until he was transferred to Pittsburgh as manager of production.

Allied Sales Rise

Allied Chemical and Dye Corp., New York, recently reported a sales increase of more than 18 percent during 1955, as compared with 1954. The firm had sales of \$628,514,087 during 1955 and earnings of \$93,187,710, while 1954 figures were \$530,776,716 and \$74,632,747, respectively.

Colgate Moving to N. Y. C.

Colgate-Palmolive Co., Jersey City, N. J., began its three-stage move to its new headquarters building at 300 Park Ave., New York City during February. The move to new quarters will probably take place during the week-ends of Feb. 12, 19 and 26. Dedication ceremonies will be held later this spring when the offices are ready for inspection by visitors. A celebration commemorating the company's 150th anniversary is scheduled to be held jointly with official opening at that time.

Hooker Sales Up

Record sales of \$94,182,000 were achieved by Hooker Electrochemical Co., Niagara Falls, N. Y., in 1955, a 21 percent increase over the firm's 1954 sales of \$77,517,000. Net earnings for 1955 were \$10,555,000, a 29 percent increase over \$8,202,000 in 1954. Both sales and earnings included operation results of Durez Plastics and Chemicals, Inc. and Niagara Alkali Co., both of which were consolidated with Hooker during 1955 and which now operate as divisions of the parent company.

Hercules Sales Rise

Hercules Powder Co., Wilmington, Del., showed a 21 percent increase in sales and a 34 percent rise in net income during 1955, it was announced recently by Albert E. Forster, president of the firm. Hercules had a net income of \$19,012,-125 in 1955, as compared with \$14,-140,070 during 1954. Net sales and operating revenues amounted to \$226,651,058 in 1955 to establish an all-time high for the company. Figures for the previous year were \$187,547,566.

New Johnson Booklet

S. C. Johnson & Son, Inc., Racine, Wis., recently issued a new consumer booklet titled "How to Take Care of Furniture," which contains a checklist on the maintenance of furniture made of bamboo, leather, rattan, rush, tile, etc.

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When this well known manufacturer developed this now famous sun tan product, he looked to the FLUID CHEMICAL COMPANY for his aerosol packaging.

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Niagara Falls Plant has been producing

CAUSTIC POTASH

for the industrial chemical market since 1918



FOR ALL INDUSTRIAL USES

LIQUID – Iron free, a clear water-white solution of 45-50%. In tank cars and in returnable and non-returnable 675 Ib. drums.

LIQUID – Special low chloride, iron-free grade – 45-50%. In tank cars and in returnable and non-returnable 675 lb. drums.

SOLID - 90%. In 700 lb. drums.

FLAKE - 90%. In 100, 200, and 400 lb.

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There's good reason for you to have confidence in International as your source of supply of Caustic Potash. For 38 years, International's Niagara Falls plant has been producing Caustic Potash with a consistent record of uniformity, quality, and good service. You'll get prompt deliveries and helpful cooperation when you depend on International for Caustic Potash in the form you require—Liquid, Solid, Flake, Granular, or American Selected Walnut.

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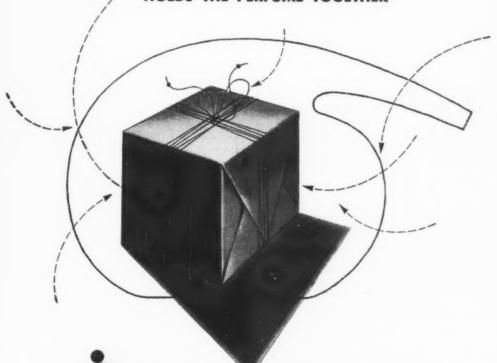
THE new aromatic chemical musk-tonkin type lasting, economical

Useful addition to present standard fixatives

Does not discolor perfumes, creams, soaps, and other cosmetic preparations

Like a string around a package, it...

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SYNTHETIC: DETERGENTS



64	SOAPS AND D E. G. Thomssen and Jo	ETERGENTS ohn W. McCutcheon	
THE la factor man, che making in perfumin and applications of this stan	est and only complete A re. Primarily a practic mist, or executive, it continues the extension of the executive, and coloring, glyceric eations of finished soap etergent laboratory, plantard volume.	merican book on soap manu- cal book for the production overs such subjects as soap machinery, raw materials, he recovery, and properties and detergent products. No it, or office should be without	
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for the finest liquid and solid cream shampoos

Specially designed to give you consistently superior results in your finest formulas—"Duponol" WAQ, fluid white paste, and "Duponol" WA Paste, viscous white paste. Both offer you these all-important properties.

CONTROLLED CLEANSING is simple. These Du Pont surface-active agents retain their excellent foaming action, yet are gentle and non-drying. Body, too, can be easily controlled to give you the viscosity you wish.

STABLE COLOR means your shampoo will stay attractive through heat, light and aging. "DUPONOL" WAQ and "DUPONOL" WA Paste were designed for the whitest shampoos, pearlescent or plain. Further, their bland, clean odor won't ever interfere with the perfume you choose.

ECONOMY is the result when you use these Du Pont detergents, because you need less thickener. And, with only minor changes in formula, "DUPONOL" WAQ and "DUPONOL" WA Paste may be interchanged . . . used for either shampoo.

If you would like help with formulating problems for either type of shampoo, chances are you will profit by reading the informative bulletin put out by Du Pont's technical staff. It contains dozens of formulas, too. Clip out and mail coupon below to E. I. du Pont de Nemours & Co. (Inc.), Dyes & Chemicals Div., Wilmington 98, Del.

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This year marks the 150th Anniversary of our modest beginnings. For it was in the year 1806 that young William Colgate, the founder of our Company, opened his first soap-making factory on Dutch Street in New York City.

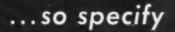
History has recorded sweeping changes in this span of 150 years—years charged with drama and excitement. Against this ever-changing background, the Colgate Company has reached across the seas and around the world, touching the lives of millions!

We of Colgate-Palmolive Company are grateful to all who have contributed to our success. And we pledge our continuing efforts to deserve the confidence of everyone we meet and do business with in the years ahead.

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to find
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HYONIC PE 250

(100% active nonionic alkyl aryl polyether alcohol)

Gives high, persistent foam

Effective over wide range of water hardness and pH

Excellent wetting agent and emulsifier

Extremely stable in presence of acids, alkalis, inorganic salts including heavy metal salts

A powerful detergent

Suggested uses—dairy detergents and milkstone remover, car wash, antiseptic sanitizer, paint and woodwork cleaner

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(100% active lauric acid alkylolamide condensate)

Superior foam stabilizer for anionics

Remarkable thickening action over a wide range of concentrations

Non-corrosive-can be stored indefinitely

Excellent detergent and wetter and shows remarkable synergism when blended with anionics or nonionics

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No, it isn't necessary to explore the universe for your detergent aids since Nopco Hyonics will undoubtedly provide just exactly the properties you need and Nopco technical men will work right with you to help you produce detergents of your own specifications.

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Chevreul, who gave us our modern concept of fatty substances, observed early in his work that the solid acid isolated from mutton tallow had a higher M.P. than that obtained from pork fat. This observation culminated in the preparation of stearic acid in 1816. Since that time stearic acid has become a vital raw material for many products, including candles, cosmetics, buffing compounds, textile softeners, food emulsifiers and pharmaceuticals.

In 1837, A. Gross & Company entered the infant fatty acid field and has since pioneered in the improvement of refining techniques for these materials. Specifications for GROCO 55—TRIPLE PRESSED STEARIC ACID show at a glance the high purity and stability characteristics which have been built into the best stearic acids of today.

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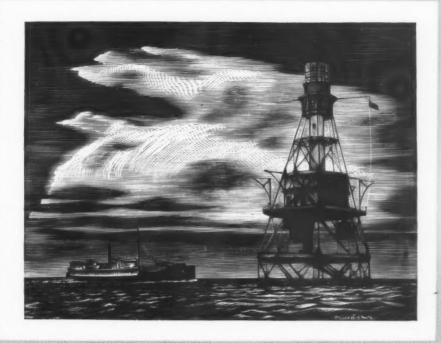
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11:06 A.M. EST: Message goes out by teletype to Merchants' Chicago office, where rush order and delivery instructions are relayed to adjoining warehouse.



10:20 A.M. CST: Five drums of trichlorethylene are loaded on small delivery truck.



10:45 A.M. CST: Shipment arrives at customer's plant, less than

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For thirty-five years Merchants Chemical has made a habit of special service and prompt service in the distribution of industrial chemicals. The list of products includes acids, alkalis, fungicides, surfactants, chlorinated solvents, emulsifiers, laundry compounds, soaps, dry ice and chemical specialties. In the instance outlined here, Merchants actually beat the clock in an effort to get material to a customer when and where he needed it. Close cooperation and an efficient communication system among the nationwide Merchants' offices made it possible. Wherever you locate, Merchants can serve you.



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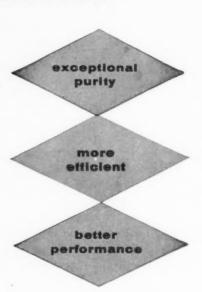


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A high active lauramide. The amide content is 94% minimum lauric amide. +P-621

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Rosottone Savon gives a natural rose effect to your products

requiring a pH above 7. This new aromatic is extremely stable in soap of all descriptions, including laundry and liquid soaps. Because of its good color stability, it is especially recommended for oil and water cosmetic creams.

High quality, modest price and ready availability—you get them all in Rosottone Savon.

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J. D. ZELLERBACH

Portrait by Fabian Bachrach

"Good business is for everybody...

"At Crown Zellerbach we have 24,000 employees who, like the company, have bills to pay, plans to finance, and emergencies to anticipate. This requires saving.

"Crown Zellerbach saves a portion of its annual income in U. S. Government securities. This saving is safe, systematic and, with interest, profitable. Our employees follow the same 'Good business' practice through the Payroll Savings Plan.

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Plan. To them this means money for the goods of today, the ambitions of tomorrow, and the security of the future. And this way of saving has the same advantages for an individual as for a company—a safe investment, a convenient method, and a profitable return.

"'Good business', then, is not just for business. 'Good business' which includes systematic saving in Government bonds is for everybody."

J. D. ZELLERBACH, President Crown Zellerbach Corporation Chairman, Committee for Economic Development Chairman, National Manpower Council

If you do not have the Payroll Savings Plan . . . or if you have the Plan and employee participation is less than 50% . . . write to Savings Bond Division, U.S. Treasury Department, Washington, D. C. Your State Sales Director will be glad to help *you* express your agreement with Mr. Zellerbach . . "Good business is for everybody."

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SOAP & CHEMICAL SPECIALTIES



NOW-high-gear production of the newest form of Nacconol

Nacconol DBX

the super-dense bead

Now for the first time ever-

a 40% active spray-dried alkyl aryl sulfonate—that answers the industry's need for a versatile bead form as dense as most flake materials.

Send for sample and see for yourself how in comparison with most flake products—

NACCONOL DBX essentially eliminates dusting.

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NACCONOL DBX makes better looking products adds new sales appeal.

For the competitive days ahead, start today with the brand new super dense bead—NACCONOL DBX. Your orders will be quickly filled from nearby warehouse stocks. For your sample, simply fill out the handy coupon.

Without cost or obligation, send a Nacconol DBX sample to:

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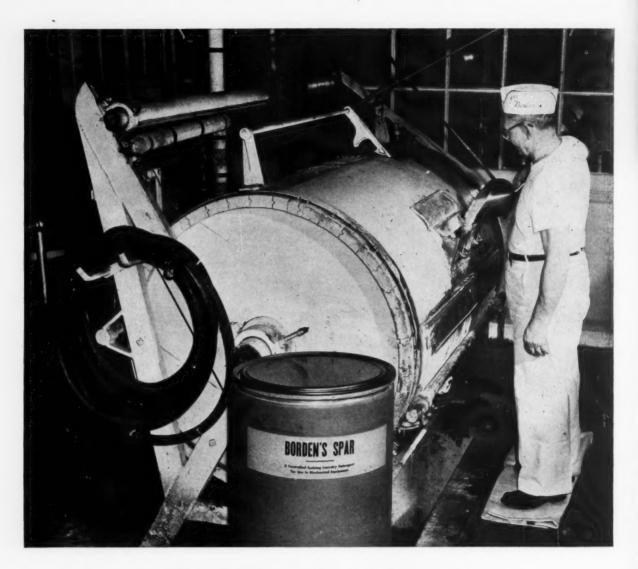
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In Food Plant Laundries, too, THE KEY IS CMC

Where cleanliness must be the byword—as in the plants of the Borden® Company—a controlled sudsing detergent based on Hercules CMC provides an efficient and economical formulation for laundering plant uniforms.

The addition of CMC to Borden's own "Spar" supplies the exceptional soil-suspending properties that prevent redeposition of dirt on clothes. With CMC, uniforms get whiter, faster—dirt particles always go down the drain with the rinse

water. And with CMC you save hot water in your washing operations.

The advantages of economical CMC are well-known to commercial laundries and leading manufacturers of detergents everywhere. If you are among the few who have never tested CMC... do it now! Technical information and a testing sample are available on request.

Virginia Cellulose Department

HERCULES POWDER COMPANY

961 Market St., Wilmington 99, Del.

V356-

... in brief

as the editor sees it . .

COMBINATIONS . . . Of late, we've noticed a rash of new products that do not one thing, but two or maybe three. Car cleaners which both clean and polish the car, floor waxes that are bacteriostatic, fungicidal and insecticidal, cleansers which both wash the dishes and act as a sanitizer, glass cleaners that clean the window and prevent fogging, insecticides which also deodorize, — they're just a few.

All of which makes us conclude that the onepurpose product is doomed. If you make something that's just designed to polish the car or Aunt Minnie's teakwood table, you've got to find other uses for the product. Maybe shining shoes or lubricating victrola needles. If your product happens to be an item only to kill bugs, get busy. Figure out something else it will do. How about greasing antique clocks or polishing Philodendron leaves?

Now, it just so happens that we ourselves have come up with a red-hot idea for a dual purpose household product. It's a box of soap powder that plays music and automatically opens the door to let the cat out. Everything is pretty well set except that we have got to figure out something else for people who don't have cats.

* * * * * *

FOR CASH One of our larger toilet goods houses has recently extended its cash discount period from ten days to thirty days. And in addition, they have made much to-do about it among their customers which we suppose is to be expected. Why they just didn't cut the price of their goods two per cent and let it go at that, we don't know. But the fact remains that they chose this manner, in effect, to cut their prices.

Never have we seen rhyme or reason in any

cash discount. But it has become so deeply ingrained in business procedure over the years that it's taken for granted half of the time. Really, the cash discount is an outmoded hang-over from way back in the Civil War days when discounts up to ten or even twenty per cent were common. Money in those days was at times a pretty scarce item. The reason for the discount was obvious. But why today?

We have never yet heard one truly valid reason to support the cash discount. To some this is almost the equivalent of an expression of disbelief in home, fireside and motherhood. It's heresy. But we feel it's the truth which an honest evaluation of the factors involved would substantiate.

SAFETY... Said a speaker before a recent meeting of the Compressed Gas Association: "... the safety record of this new industry is nothing short of remarkable." He was discussing the low incidence of accidents attributed to aerosols of which over 750,000,000 units of all types of products have been sold since the war.

For this fine safety record, this speaker pointed out, credit should go to the Chemical Specialties Manufacturers Association, the gas association, the aerosol industry as a whole and government agencies, all working closely in establishing manufacturing procedures to assure safe products and proper precautionary labeling practices to assure correct consumer usage. Wide acceptance of the aerosol package, used today for a hundred different products in over 40,000,000 American homes, imposes a special responsibility on the industry. That the industry has accepted this responsibility in full, its fine safety record will attest.

TES

Coast-to-Coast integrated production assures top quality_top service wherever you are

Westvaco PHOSPHATES

Expanded elemental Phosphorus production at Pocatello, Idaho and increased processing facilities at Carteret, N. J., Lawrence, Kansas and Newark, California assure you of uniform quality at a low delivered price, wherever and whenever you need any of the phosphates listed.



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*Hexaphos is the trade-mark of FMC for its brand of Sodium Hexametaphosphate



Westvaco Mineral Products Division

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POISONS... In the rash of publicity in which "common household chemical poisons" find themselves, we note that this thing has now reached the stage of pamphlets, treatises and books. Always somebody seems ready to rush into print. We have run across a booklet put out by the Connecticut State Department of Health on "Common Household Poisons and Their Antidotes." It's a sorry, halfdone job which in our opinion would be of little or no value to a physician in an emergency. Many of the antidotes given are incorrect, some ridiculous.

Now from the University of Rochester, we hear that a new book will be published next June 1 entitled "Clinical Toxicology of Commercial Products." The book or encyclopedia will list 15,000 products with description, ingredients, toxicity rating. It's the first attempt at a "complete medical directory of commonly used products" for the doctor. Manufacturers themselves have aided in the compilation. This could be a good book, a useful book, but our prediction is that it will be obsolete before the ink is dry on its pages.

We still feel that the time to attack this problem is before the damage has been done, before the poison is ingested. And that means publicity, education, and still more education.

conscious... From the attitudes of some public health officials, the medical associations and others, one could assume that the average manufacturer of household chemical specialties completely ignores the hazards of certain of his products—or that he is an ignoramus who knows nothing about these hazards. From the manner in which the medical fellows have picked up the ball and are running with it of late, the chemical manufacturer must be classed by them as a moron of the first water.

At a recent symposium on poisonings by household chemicals and drugs held by the American Association for the Advancement of Science, Dr. E. G. Klarmann, president of the Chemical Specialties Manufacturers Association was permitted to make a statement on behalf of the chemical specialty manufacturer. He emphasized that the manufacturer is fully aware

of his responsibility to the public and that he is prepared to do everything within his power to discharge this responsibility.

As a matter of fact, nobody has been more conscious of this responsibility than the manufacturer, a consciousness which dates back for years and is not merely a product of the current hubbub. This should be explained to the doctors.

DANGER... How dangerous are household chemicals to the general public? This was the subject of a panel discussion at a recent meeting of the American Association for the Advancement of Science which was sponsored by the Committee on Toxicology of the American Medical Association. Several points of close interest to the chemical specialty manufacturer were brought out in the discussions.

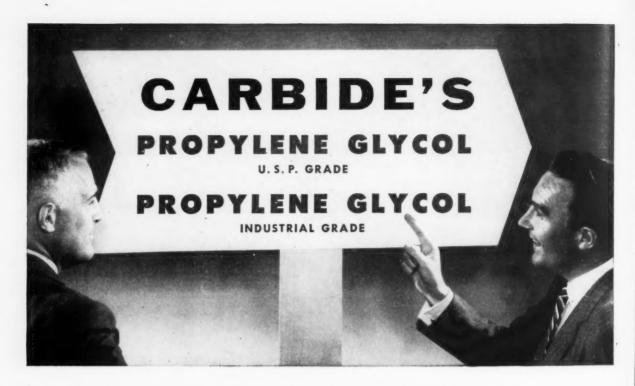
One panel member pointed out that "many new chemicals complicate the health picture . . . and are finding their way into the home through household products." Not new chemicals, but old ones, we believe still constitute the greatest hazard, products which have been around the home for many years—kerosene, polishes, ammonia, lye, bug killers, cleaners, and our old friend of the medicine chest, aspirin.

Another reported on a study of voluntary ingestion of DDT covering several years which in effect gave DDT another clean bill of health when used in household or agricultural insecticides. During the study, no volunteer "complained of any symptom or showed any sign of illness."

A third panel member discussed harmful effects of chemicals on the skin, pointing out that "two-thirds of all compensated occupational diseases are skin complaints." And adding, "In the home the figures are no less impressive." Mention is made of "dermatitis resulting from contact with cleansing agents in housework." Mention was made of the benefits of cleanliness in combating dermatitis.

All concluded that the problem of household chemicals is serious mostly because the physician knows little about them, the householder less. To us, it still looks like a job of publicity and education.

TIES.



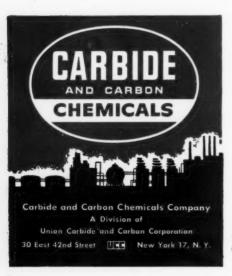
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Propylene glycol U.S.P.-a glycol with proven high purity-has the excellent properties demanded by industry for pharmaceuticals, dyes, food flavors, and certain perfumes. Propylene glycol also assists in the dispersion of soaps, oils, waxes, and greases in water.

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CARBIDE also produces an industrial grade of propylene glycol that is widely used as a component of polyester resins, a coupler in hydraulic brake fluids, and as a coolant in refrigeration systems.

Carbide and Carbon Chemicals Company, producer of propylene glycol since 1931, produces thirteen other diols and triols:



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- 2,2-Diethyl Propanediol-1,3

- Hexylene Glycol
- 3-Methyl Pentanediol-1,5
- Hexanetriol-1,2,6
- 2-Ethylhexanediol-1,3
- Pentanediol-1,5

For further information on propylene glycol or any CARBIDE chemical, write for your copy of "Physical Properties of Synthetic Organic Chemicals" (F-6136) or the "Glycols" booklet (F-4763). Offices in principal cities—in Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal and Toronto.

The terms "Kromfax" and "Carboseal" are registered trade-marks of Union Carbide and Carbon Corporation.

as the reader sees it ...

Packets Editorial

Editor .

Your editorial entitled "Packets" in the November issue of Soap & Chemical Specialties, naturally, was very interesting to us because we have been offering various products in individual packets for many years.

These include one-shot packets of detergents for automatic laundry use, bleaches, coffee urn cleaners, etc. If at any time you have inquiries for such a package, either under our own label, or that of the customer, I hope you will keep us in mind.

P. S. Bezek, Help, Incorporated Chicago 10, Ill.

Indeed we will. Ed.

Thanks From Norway

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I just wanted to tell you how nice it was to have the opportunity of meeting you during my visit to New York as a member of the European soap study group.

Your interesting lecture was of considerable use to me, and you really contributed your share to the success of a memorable day. By the way, it was great fun to see your article, "Ten European Soapers Tour U. S. Plants" in the October issue of SOAP, to which our firm is a subscriber.

I had great expectations on my first visit to the United States, and I can assure you that I was not disappointed.

> EINAE DIESERUD Persil-Fabrikken Oslo, Norway

More on Bleach

Editor:

I enjoy reading your magazine, but I wish it carried more on laundry bleach. Bleach, as you well know, is widely used for cleaning and sanitation. But during dry

spells and drought, bleach brings out the sulfur and iron in water and causes yellowing of fabrics. No one has succeeded in preventing this. This is a problem that exists all year round in some areas. During the months of July, August and September, sales of bleach drop from 75 to 100 percent. . Let's hear more about bleach and less about soap.

Frank Lento, 208 Ridge Ave. Punxsutawney, Pa. of this issue for article of

See page 125 of this issue for article on Monsanto's new "ACL-85" for use in dry bleaches and sanitizers. Ed.

You Have to Advertise

Editor:

Here is a maxim that isn't true: "If you build a better mouse-trap than your neighbor, the world will beat a pathway to your door." Because no matter how good your product is, you still have to advertise it, or send salesmen out to sell it. In this day and age nothing will

sell of its own accord. It has to be pushed.

ED BATZNER, 1116 W. North Ave, Milwaukee

Amen, brother. Ed.

Sequel to "Glim" Story

Editor:

In your December 1955 issue we note with interest your article, "The Story of 'Glim'." We are somewhat disturbed to note that the article did not mention the filling problem to the Babbitt Company. We are attaching an article which we think you might be interested in publishing as a sequel to the "Glim" story.

J. J. Ludwig,
Ad and Sales Promotion
General Electric Co.
Milwaukee

The sequel which Mr. Ludwig mentions in his letter begins on page 63 of this issue and deals with the use of GE's X-ray determination of the fill of "Glim" liquid detergent cans. The reason why this phase of the product was not mentioned in Mr. Shelton's article was that he confined himself to the marketing aspects of the product. He covered his company's experience with "Glim" up to the time its marketing was taken over by B. T. Babbitt Co.—Ed.

Oldest known bathtub in existence is this early Roman tub, which dates back to somewhere around the fourth to first century B.C. Movable tub, shown at "Bathorama" exhibit, which was a feature of the 29th annual meeting of the Soap Association in New York, last month, is believed to be the oldest known movable bathtub in existence. Tub is 41/4 feet long.





LOOK at the sales advantages offered your product by G-11°

(Brand of Hexachlorophene)

The market for products containing G-11 is an established, growing market with virtually unlimited opportunities for profitable development.

Few products have ever been studied so exhaustively and given such unanimous acclaim by authorities. G-11 is recognized as the proven, effective and non-irritating antiseptic chemical that offers outstanding hygienic and deodorizing advantages.

Years of safe, successful use by millions of people assure the continued success of your products containing G-11.

As the originator and producer of G-11, Sindar offers you the benefits of its scientific knowledge, practical marketing experience and technical service in using it to the best advantage in your soaps, detergents and cosmetics.

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Newly elected officers and board members of the Association of American Soap & Glycerine Producers at first meeting of newly elected group during annual meeting in New York, Jan. 27. Seated, left to right: Nils S. Dahl, treasurer; A. K. Forthman, far west vice-president; E. B. Osborn, president; William H Burkhart, eastern vice-president; A. W.

Schubert, middle-west vice-president and William L. Sims, II, director. Standing: J. L. Mayberry, director; G. W. Huldrum, Jr., director; F. B. Patton, director; Russell H. Young, director; Frank J. Pollnow, Jr., director, John Christian, director; G. H. Hallenbeck, and W. S. Jessop, director. Mr. Hallenbeck attended the meeting in place of E. A. Moss.

Soap Assn. Meets, Elects Osborn

REDICTIONS that 1956 will be another good business year, the election of a new president of the association, and the first functioning of new groups within the Industrial Division were among the highlights of the 29th annual meeting of the Association of American Soap & Glycerine Producers, held at the Waldorf-Astoria Hotel, New York, Jan. 25-27.

E. B. Osborn, president of Economics Laboratory, Inc., St. Paul and New York, was elected president of the soap association to succeed E. W. Wilson, vice-president of Armour and Co., Chicago, who served for one year. Elected as the new eastern vice-president

for the association by the board of directors is W. H. Burkhart, president of Lever Brothers Co., New York. He succeeds E. B. Osborn in the post. Mr. Burkhart was named to the board following the resignation of J. J. Babb on March 4, 1955. Mr. Babb was president of Lever Brothers Co., New York, at the time and later became chairman of the board.

Other association officers reelected include A. W. Schubert, president of Emery Industries, Inc., Cincinnati, who continues as middle west vice-president, and A. K. Forthman, president of Los Angeles Soap Co., Los Angeles, serves another term as far west vice-president. Also reelected as officers are

N. S. Dahl, general manager of John T. Stanley Co., New York, treasurer; M. A. McManus, treasurer of Lever Brothers Co., New York, assistant treasurer, and Roy W. Peet, association manager who remains as secretary.

Five new members were elected to the 15-member board of directors. They are: J. L. Mayberry, general manager, R. R. Street & Co., Chicago; F. J. Pollnow, Jr., Vestal Laboratories, Inc., St. Louis; G. W. Huldrum, Jr., Shell Chemical Corp., New York; F. B. Patton, vice-president, Armour & Co., Chicago, and John Christian, vice-president, Monsanto Chemical Co., St. Louis.



Left to right: Felix E. Lacey, Swift & Co., Chicago, newly elected chairman of the seering committee of the Fatty Acid Division, with E. L. Burtis, Food and Agriculture Organization of the United Nations, and L. T. Howells, Beach Soap Co., Lawrence, Mass., retiring chairman of Industrial Division.

The board of directors of the Soap Association, in addition to the officers and directors listed above, also includes: W. L. Sims, II, president of Colgate-Palmolive Co., Jersey City, N.J.; Neil H. McElröy, president of Procter & Gamble Co., Cincinnati; E. A. Moss, Swift & Co., Chicago; Russell H. Young, Davies-Young Soap Co., Dayton, O., and W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago.

Steering committees for three of the divisions of which the Soap Association is composed were elected at the meeting. Committees or a chairman were also elected for

five of the groups within the Industrial Division.

Elected to the steering committee of the Industrial Division were: Frank J. Pollnow, Jr., Vestal Laboratories, Inc., St. Louis, chairman; T. J. Wrocklage, Procter & Gamble Co., Cincinnati, vice-chairman; E. Randa, Armour & Co., Chicago; J. C. Harris, Monsanto Chemical Co., Dayton, O.; G. H. Hallenbeck, Swift & Co., Chicago; F. T. Lanners, Economics Laboratory, Inc., St. Paul, and Arthur Phillips, Solvay Division, Allied Chemical & Dye Corp., New York.

The steering committee of the Fatty Acid Division is now composed of the following: F. E. Lacey, Swift & Co., Chicago, chairman; E. H. Blumen, Harchem Division, Wallace & Tiernan, Inc., Belleville, N. J., vice-chairman; F. C. Haas, Archer-Daniels-Midland Co., Minneapolis; W. F. Mitchell, General Mills, Inc., Minneapolis; J. M. Hoerner, Armour & Co., Chicago; W. J. O'Connell, Trendex Division of Humko Co., Memphis; Dr. G. Zinzalian, E. F. Drew & Co., New York.

W. W. Bray of Proctor & Gamble Co., Cincinnati, and G. W. Huldrum, Jr., Shell Chemical Corp., New York, were elected chairman and vice-chairman, respectively, of the Glycerine Division steering committee.

Five of the six groups within the newly revised Industrial Division which elected committees or a chairman include Skin Cleaning in Industry, Building and Equipment Maintenance, Commercial Dishwashing, Industrial Processing, and Fabric Cleaning.

George H. Hallenbeck of Swift & Co., Chicago, was elected chairman of the Industrial Processing group; Jay C. Harris of Monsanto Chemical Co., Dayton, was elected chairman of the Fabric Cleaning group and Fred T. Lanners of Economics Laboratory, Inc., St. Paul, was named chairman of the Commercial Dishwashing group. These men were authorized to choose their own committees. Elected to the Building and Equipment Maintenance group committee were Earl Brenn, Huntington Laboratories, Inc., Huntington, Ind., chairman; Daniel H. Terry, Bon Ami Co., New York, vicechairman; John Clark, U. S. Sanitary Specialties Corp., Chicago; Adair Baker, Vestal Laboratories, Inc., St. Louis, and James Cloney, Antara Chemicals Division, General Aniline & Film Corp., New York.

The Skin Cleaning in Industry committee elected includes: E. Randa, Armour and Co., Chicago, chairman; Jack J. Jones, Sugar Beet Products Co., Saginaw, Mich.,



Roy W. Peet, manager of the Soap Association, with Miss Patricia Anne Cowden, Maid of Cotton for 1956.

vice-chairman: Dr. P. G. Bartlett. West Disinfecting Co., Long Island City, N. Y.; John D. Moore, Pacific Coast Borax Co., New York, and G. H. Packwood, Jr., G. H. Packwood Mfg. Co., St. Louis.

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THE three day meeting, which had the largest registration in the history of the association, featured group sessions of the fatty acid and industrial divisions on Jan. 25. The general meeting began on Jan. 26, the afternoon of which was given over to simultaneous group meetings of the glycerine and industrial divisions. The general meeting continued through the morning of Jan. 27, and was followed by the annual meeting of the association and a meeting of the board of directors in the afternoon.

In discussing the "World Markets for U. S. Fats and Oils", E. L. Burtis of the Food and Agriculture Organization of the United Nations pointed out that "world production of fats and oils, including butter in terms of fat content, is now approaching 60 billion pounds annually. In comparison, U. S. production in 1955 (the peak year so far) was 13.6 billion pounds, a little under 25 percent of the world total." Exports of fats and oils from the United States in 1955 were a "little over four billion pounds", Mr. Burtis said. This represented more than 25 percent of total world exports and was equal to 30 percent of U.S. output.

In discussing the outlook for the coming year, Mr. Burtis said that it is clear up to the end of next summer. The outlook is bright, except, perhaps for the price of lard, which in recent months has been at the lowest levels since early 1953 and very much below the 1954 highs. Some improvement is foreseen because the season peak in the hog run has passed, and some decline is expected in the spring pig

In speaking of the outlook for U. S. exports of tallow and greases, Mr. Burtis said that production of these two materials "in



Frank J. Polinow, Jr., vestal Laboratories, Inc., St. Louis, newly elected chairman of the steering committee of the Industrial Division, with T. J. Wrocklage, Procter & Gamble Co., Cincinnati, vice-chairman of committee.

the rest of the world is now likely to rise rapidly enough in the foreseeable future to threaten the position of the United States in world markets. Improvements in livestock production come slowly, and the art is already highly advanced in Northern Europe, the principal livestock producing region outside the United States. Even if Argentina should recover its prewar level of tallow exports-an unlikely development-the share of the United States in the world total would on-

ly drop to 75 percent. The major developments in the world outlook for tallow and greases are likely to come from the demand side.'

The amount of fats consumed in feeds for live stock monthly is close to 20 million pounds, according to Richard B. Mortimer, president of the National Renderers Association, who spoke at the Fatty Acid Division meeting, the afternoon of Jan. 25. Mr. Mortimer said this figure is twice that of the Census Bureau.

Dr. H. C. Black, associate director of research, Swift & Co., Chicago, presenting glycerine award plaque to first prize winner, Dr. Reed A. Gray, plant physiclogist of Merck & Co., Rahway, N. J., for his work in incorporating glycerine in streptomycin formulations for insect control on plants.





E. H. Blumen, Harchem division, Wallace & Tiernan, Inc., Belleville, N. J., newly elected vice-chairman, (left) with Felix E. Lacey of Swift & Co., Chicago, new chairman of the steering committee of the Fatty Acid Division.

The National Renderers Association, he said, "very definitely question (s)" the Census figure and is going to try to get a more accurate one than the 10 million pounds a month reported by the Bureau as the consumption of fat in livestock feed.

Mr. Mortimer discussed the research programs of the National Renderers Association on fats in livestock feeds and other uses.

"Trends in the Application of Fat Derivatives for Textile Processing" were outlined in a paper by Emery I. Valko of Onyx Oil & Chemical Co., Jersey City, N. J.

"The application of textile assistants falls broadly into two groups: first, processing, that is the conversion of a polymer into fibers and filaments (in the case of man-made fibers); the conversion of fibers and filaments into yarns; and the conversion of yarns into knitted or woven fabrics," Dr. Valko said. "The second group of applications is in the finishing, that is in the conversion of fabrics into dyed and finished cloth ready for the manufacture of garments".

Although it is "only a

guess", Dr. Valko concluded, "we believe that for textile lubrication (processing and finishing) the use of fats and oils and fatty derivatives amounts to some 1.5 to two percent on the weight of textiles. In terms of present day markets, this equals 90 to 120 million pounds per year. This quantity does not include wetting agents and detergents used in textile mills, which in a large and increasing ratio are based on petrochemical raw materials."

Soaps in Rubber

PPROXIMATELY 80 percent of the hot GR-S synthetic rubber produced in the U.S. is made with fatty acid soap, Donald Druesedow of B. F. Goodrich Chemical Co., Akron, O., told the meeting of the Fatty Acid Division, the afternoon of Jan. 25. Mr. Druesedow's talk was entitled: "Fatty Acids in the Manufacture of Synthetic Rubber". He pointed out that the production of synthetic rubber requires large amounts of soaps as emulsifying agents. GR-S type synthetic rubber, the single largest class consumer was used at the rate of 532,335 long tons in the first nine months of 1955, according to Mr. Druesedow. Six to seven pounds of soap are used for each 100 pounds of rubber hydrocarbon produced. On a percentage basis, the soap used is about six percent of the rubber production. The large volume soaps now used in synthetic rubber production are rosin soaps, fatty acid soaps, mixed rosin acid - fatty acid soaps and, by comparison, small amounts of synthetic soaps and soaps derived from tall oil.

The final paper of the first meeting of the Fatty Acid Division dealt with "Waste Water Problems and Solutions for Fatty Acid Production", by Ralph I. Berman, Bulkley, Dunton Processes, Inc.

Held simultaneously with the meeting of the Fatty Acid Division, the afternoon of Jan. 25, were meetings of the six groups composing the Industrial Division.

The Skin Cleansing in Industry group heard a talk on the possibility of a public relations program which might be undertaken by the group. The paper was presented by Henry Rockwell of Jones & Blakney Co., New York public relations firm which handled the publicity on the book "Industrial Dermatitis" edited by Dr. Louis Schwartz and published by the Soap Association. This group also heard a report on public relations by Jack J. Jones of Sugar Beet Products Co., Saginaw, Mich.

The use of radioisotopes in evaluating detergency was discussed at the Fabric Cleaning group meeting by Cristos Manos of the research and development department of Colgate-Palmolive Co., Jersey City, N.J.

The Building and Equipment Maintenance group heard talks by Albert J. Burner, supervisor of cleaning standards, central maintenance division, operations services department of the Port of New York Authority, and J. Lloyd Barron, engineer and sanitation manager of National Biscuit Co., New York. In his talk, "Mutual

GLYCERINE - the World Outlook

By Leo Pasternak

L. Pasternak & Co. New York City



Y virtue of its being the number one consumer and producer of glycerine in the world, the United States has a very dominant position in the international markets.

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If you, as many of us do, follow the importations of crude and refined glycerine through the trade papers, you probably take the information for granted and, depending upon your point of view, you may be either pleased or displeased. To those of us engaged in international trade, any arrival could represent weeks of anxiety and it is only after the steamer docks and the cargo is delivered that we can relax.

From the very beginning of our negotiations with a foreign seller, whether for 10 tons in drums or 500 tons in bulk, we must be constantly on the alert so there will be no deviation from the many factors which enter into a successful purchase. I would like to highlight some of the difficulties which, from time to time, have caused us much concern.

Most of the steamship lines operating to and from United States ports in a given service are usually members of a Steamship Conference. The Conference establishes rates for all commodities and members are obligated to adhere to

*Address by Leo Pasternak, L. Pasternak & Company, at Annual Convention, Glycerine Division, Association of American Soap & Glycerine Producers, Inc. January 26, 1956. the proposed rates under all circumstances. Violations would subject the members to severe penalties, but I do not know of a single instance where a member has not complied with all of the regulations.

There are, of course, many non-conference lines, particularly those serving foreign ports. In many instances, these lines have slashed rates to foreign ports and made our competitive situation very difficult. As an example, the rate to United States ports from Argentina in bulk is \$33.50 per ton, whereas time after time Germany has effected freight at \$20.00 to \$25.00 per ton.

Notwithstanding the competition from other lines, the Conference, because of labor conditions and steadily increasing costs, regularly attempts to increase its rates. By diligent action, we have thus far been able to maintain the status quo. Otherwise, the additional cost would have to be absorbed by the buyers. Purchases are made either C. & F. or C. I. F. but the seller would, of course, add the additional freight costs to the selling price.

I would like to point out that glycerine rates, as a rule, are high, ranging from \$20.00 to \$59.00 per ton. In computing these rates, distance is not always the prime consideration. A shipment can be made from a port like Singapore, Malaya, to South Africa for approximately \$21.00 per ton, whereas the rate to East Coast United States ports is \$49.00 per ton.

Over the years that I have

been trading internationally, I cannot recall many instances where an offer was made with a specific shipping time of thirty days. For some reason, not entirely clear, the foreign seller as a general rule will only offer for shipment within sixty days and, since this has become the established trade practice, we, of course, must buy on this basis. In doing so, we are well aware that the shipment will not be made until the middle or latter part of the second month. Depending upon the location of the exporting country, a purchase made in December for January/February shipment may not arrive until late March or early April. As a practical business matter, this means that the American buyer who looks to the foreign market for supplies must anticipate his requirements many months in advance, meanwhile being exposed to the hazards and risks of the market for three and a half to four months. We try to minimize these risks by urging quick shipments, but usually to no avail.

Foreign Analyses High

UNTIL recently, and for more years than I care to remember, the foreign seller, with few exceptions, has always insisted that in making settlement the seller's analysis be final. This condition is one which the American importer has had to accept and, in too many cases, with sad results. Quite often, the foreign analysis is higher than ours and, while we have learned to take the differences in stride, it is

a most unhappy situation when the buyer receives less glycerol than he is paying for.

The question of analysis has always been one of our most worrisome problems, especially as the penalties against the buyer can be exceedingly severe. We have tried, over the years, to find a better trading basis but, since it has been a seller's market for a long time, our efforts were not too successful until quite recently.

Today I am happy to report that within the past four to six weeks we have been able to reverse the trading terms, particularly with our Argentine friends, and actually impose upon them not only buyer's analysis, but delivered weights as well. This was made possible when glycerine was released from Government control and returned to private industry.

Most countries permit the entry of crude free of duty. In the United States the duty is 4/10¢ per lb, and is assessed, as far as we know, as a revenue producer only. There have been numerous occasions when our duty has operated to our competitive disadvantage, but I see no likelihood of the duty being eliminated or lowered. Refined glycerine in most countries is dutiable, the rate varying from 3% to 25%, depending upon the country involved. Canada and South Africa waive the duty on dynamite grade for explosives purposes, but refined grades for all other purposes are dutiable. In this country the duty is 1¢ per lb. on all refined

When shipments are made in drums, provided that the drums have not originated in the United States, the duty on the containers is 12-1/2¢ ad valorem, which is refundable in the event the drums are destroyed in Customs custody.

Traditionally, with few exceptions, a letter of credit is established in favor of the seller before shipment is made. Usually, the cost is not over one eighth of 1%, but in Switzerland and Argentina additional charges are permitted by the banking laws. As we rarely draw

supplies from Switzerland, their regulations are not bothersome but, in the Argentine, the banks take full advantage of what the law allows. Accordingly, we have had to pay 3/8%, 2/8% to the Argentine bank and 1/8% to our bank here. This extra 1/4%, in effect, is a penalty against the buyer due to the necessity of meeting the seller's payment terms.

There are times when the letter of credit requirement is waived and payment is made against presentation of documents. In these cases the charges are purely nominal

Most Imports C. & F.

A LARGE percentage of the glycerine coming to the United States is purchased on a C. & F. basis and the insurance is the responsibility of the buyer. The large shipments arrive in bulk. The insurance regulations for bulk shipments are very stringent and, unless fully complied with, can at times result in heavy losses. One condition the insurance companies insist upon is the use of a surveyor authorized by them, not only at the port of shipment but also at the port of discharge. The discharge survey cost is, of course, for the buyer's account. On bulk shipments. insurance policies generally provide that the first 1/2% of loss is for the account of the insured. Frequently, losses do not exceed 1/2%, in which event whatever loss is sustained increases the buyer's cost.

The insurance rates cover marine risk, war risk and contamination and, provided that all of the rules have been observed, claims for loss in weight or contamination are honored with reasonable dispatch.

Bidding Basis

A S all the matters I have touched on bear directly on the important factor of basic price, I have left this to the last. How do we arrive at a price to bid? First and foremost, how urgently do we need the material in the United States? Second, which country is offering to sell, and third, what is our com-

petition from other buying countries? In order to keep well posted, we maintain daily cable exchange with correspondents throughout the world. It is from information thus obtained that we can properly evaluate the situation and this enables us to make bids, which in most cases are competitive.

No descripition of world trading would be complete without taking into account political situations, foreign exchange, export licenses, import licenses and specifications, but space does not permit a thorough discussion of these factors. Suffice to say that these matters at times have a most important bearing on our activities and, on more than one occasion, have caused buyers serious difficulties. This background will give you some idea as to why we cannot completely relax until the material is actually in the buyer's possession.

Now, let us turn our attention to world supply versus world demand, at present and as it may be in a few years. Before the war, many of us in the industry estimated that the production in the United States was equal to the total production of the rest of the world. This was purely a "rule of thumb" estimate but it seemed to work out rather accurately. While many changes have taken place throughout the world. I still feel, for the present at any rate, that the same yardstick can be used in determining the world supply. This, of course, does not take into account Russia, China or the satellites, from which countries accurate information is unobtainable.

Bear in mind, however, that Russia, particularly in the years 1949 to 1952, shipped to the United States substantial quantities of very high quality saponification crude. Should Russia embark on a plan to increase its consumer goods, it is conceivable that soap would be among these consumer items, in which event Russia could be a potent factor in the world glycerine picture.

The next few years should see an increase in world production,

with the United States not only holding its dominant position but perhaps exceeding the combined production of the rest of the world -this, of course, by virtue of our expanding synthetic production.

Emergency Supplies

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am frequently asked from which foreign sources we could draw supplies in the event an all out emergency required greater quantities than could be produced in the domestic market. The answer, as I see it, is that it would all depend upon the geographical location of the conflict, which nations were involved and who our allies might be. During the last war, our importations were largely confined to Cuba and Argentina with Canada and Uruguay supplying nominal quantities. The same question regarding sources of supply is also asked as it applies to peace time operations. The principal countries now supplying the United States are Cuba, Argentina, India and the Philippine Islands. For the years 1950 to 1954, inclusive, our total importations from these countries averaged approximately sixteen million pounds per year, or 66% of our entire importations during that period. Add to this another five to six percent for the importations from Canada and Mexico and our import pattern becomes quite apparent. Indications are that for 1955, for which complete figures are not vet available. percentage figures will be the same.

Foreign Sources

UBAN and Philippine producduction should be available to the United States most of the time,

as the major plants are affiliated with American companies. Argentina considers the United States its natural market and, subject to intermittent buying by other countries, will undoubtedly continue to ship us her surplus, which is about 80% of her production. Unfortunately. India cannot be counted upon as one of our regular suppliers. The largest production units are closely associated with an English company. Just how long surpluses will exist in India is a matter of conjecture as new industrial plants are rising throughout the country, many of them glycerine consumers. However, there is quite a potential production in the hands of home or cottage soap manufacturers. There are several hundred of them who some day may recover their glycer-

There are other major producing countries such as Ceylon, Siam, British Malaya, West Africa. South Africa and Indonesia. As a matter of record, material from these countries goes to satisfy the needs of the United Kingdom and South Africa. While we have from time to time imported from these sources, their preference seems to be to trade within the British Empire. It is only at such times as we are prepared to pay prices higher than foreign competition that we are able to divert some of their glycerine to our shores.

Japan presently is producing at a rate equal to its own requirements but, as the need for foreign exchange arises, they will export to Europe or the States, depending upon market conditions. At this time they cannot be considered a constant source of glycerine supply.

Belgium, France, Germany and Holland, for many years between the World Wars, exported very substantial quantities to the United States, Today their exports to us are negligible and, when we speak of buying competition, it usually emanates from one or more of these countries. So, instead of numbering them among our suppliers, the United States must share the available world supply with these Western European neighbors.

Australia and New Zealand produce a fair amount of material but, in view of the industrialization going on at an ever increasing tempo, consumption is likely to equal production. Therefore, we cannot consider this part of the world as a source of supply; in fact, they may even become net importers.

In the Carribean area, Central America and the northern part of South America, there is a modest production. Lately, we have received many requests for information pertaining to recovery equipment and we know of several places where this equipment has been installed. The available tonnage will not be very large but the United States should be the natural market.

Synthetic Production

I thinking of world production, I am not unmindful of the 20 to 30 million pound synthetic plant which has been announced for erection in Holland, but I cannot, at this time, attempt to evaluate its effect upon the European scene or the world markets, as the plant probably will not be in operation for another two years. It has been estimated that, at present, glycerine consumption in Europe is about thirty million pounds per year.

Well, what about world consumption? At this moment glycerine usage seems to be on the increase, but competitive materials are making a very strong play for their share of the poly-alcohol market, I believe glycerine will be able to maintain its position and continue to grow, providing we have

(Turn to Page 169)

World consumption of glycerine is on the increase, but competitive materials are making a very strong play for their share of the growing poly-alcohol market.

Nonionic Detergents

XPANSION of the use of nonionic surface-active agents as industrial detergents, dispersants, and wetting aids and as components of "controlled sudsing" household detergents has focused attention on the need for improved methods for characterizing nonionic agents and of quantitatively determining concentrations of nonionics in commercial products and in wash baths. Wide acceptance of nonionic agents for wool scouring; for desizing, dyeing and finishing of cotton; for processing synthetic fibers; for the cleaning, surface-preparation and pickling of metals; for dyeing, fat-liquoring and tanning leather and for emulsifying agricultural toxicants has supported, during the past ten years, a steady growth in nonionic sales. Recently, the use of nonionics as the active detergent components in "controlled sudsing" household detergents has attracted wide attention, and a rapid rise in the consumption of nonionics appears imminent. Nonionics now account for about 16 per cent of all the synthetic detergents produced. It is highly desirable that vendors and consumers alike be able to specify the chemical nature and amount of nonionic agent by recognized analytical procedures. To date, such analytical procedures have not been generally available to the industry.

Characterization and quantitative determination of nonionic agents is more difficult than that of anionic or cationic agents due to the greater chemical stability of nonionics to acids, bases, and oxidizing agents and their lack of ionic character in solution. In the case of

ionic surface-active agents, a quantitative determination of either cationics or anionics has been achieved by a titration procedure(1) based on the principle that the cationic's positively charged hydrophobic structure reacts with the negatively charged hydrophobic structure of the anionic agent to form, quantitatively, a neutral compound. Partition of a dye between water and chloroform solvents provides a sensitive end-point and good precision for this titration method. The anionic reagent, usually soap, can be standardized by acid-base titration against a primary standard, providing excellent accuracy for the measurement.

Characterization, or determination of the chemical nature of the agent, is achieved in the case of ionic surface-active materials by qualitatively determining the ions formed in solution, using standard analytical procedures (2). Additional evidence is obtained by hydrolytic degradation of the ionic agent, followed by a determination again of the ions formed. Such procedures permit one quickly to differentiate among sulfate, sulfonate, phosphate, carboxylic acid and quaternary salts. After hydrolysis, the hydrophobic component can also be isolated and characterized on the basis of physical and chemical properties.

A unified procedure is being developed by the ASTM, Committee D-12, for characterization and determination of ionic agents. The utility of infra-red analyses for this service is under investigation. Although an analytical procedure meeting all the requirements for completely characterizing the components of complex mixtures of

ionic agents has not yet been achieved, the art is adequately advanced to permit the characterization of single ionic surfactants and of simple mixtures.

The procedures used to determine anionic or cationic detergent components are of little use in estimating nonionic materials. Since nearly all commercial nonionics employ the polyoxyethylene chain as the hydrophilic or water solubilizing structure, most of the analytical methods now in use utilize reagents capable of complex formation with the repeating oxyethylene groups. Such reagents yield waterinsoluble complexes of reagent and nonionic agent which can be measured by gravimetric, colorimetric or titration procedures. Selection of reagents is complicated by the low order of chemical reactivity of the polyglycol structure and by the fact that even the simple nonionics are actually mixtures of individual polymers. Considerable investigation has shown that the only reaction of analytical significance for nonionics containing the polyoxyethylene structure is the formation in acid solution of highly insoluble complexes with heteropoly inorganic acids, such as phosphomolybdic(3), silicotungstic(3), and ferrocyanic (4), in the presence of a heavy metal cation such as barium or zinc. The exact mechanism by which these agents form complexes with polyoxyethylene structures is not known. Nevertheless, such reagents provide useful approaches to the quantitative determination of nonionics, particularly as comparative methods where the gravimetric, colorimetric, or titration factors can be established with known nonionic agents

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In the gravimetric method, the nonionic agent is precipitated in hydrochloric acid solution with silicotungstic acid and barium chloride, and the precipitate is filtered, washed, dried, and ignited at 600-700°C in a muffle furnace. The residue, consisting of the mixed oxides of barium, silicon, and tungsten, is weighed. The amount of polyoxyethylene-containing nonionic originally present in the sample is calculated from the weight of the residue by means of an empirical factor determined from known quantities by this method. The silicotungstic reagent is useful for nonionics having six or more ethylene oxide units in the hydrophilic polymer. The lower oxide adducts yield complexes which appear to be too soluble in the aqueous acid.

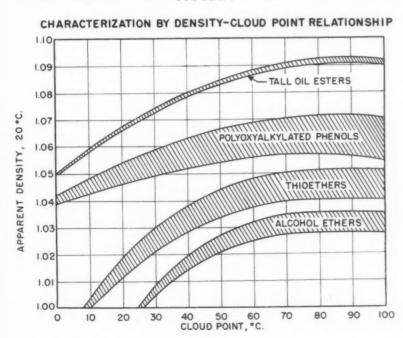
In the colorimetric modification, the nonionic is precipitated from the sample in a small centrifuge tube by the addition of barium chloride and phosphomolybdic acid. The precipitate is isolated and washed, followed by digestion in concentrated sulfuric acid. The digest is diluted, neutralized, and made up to a definite volume, in an aliquot of which molybdenum is determined, using phenylhydrazine sulfate reagent in a standard colorimetric procedure. The nonionic content of the original sample is then read from a standard curve prepared from a series of known quantities carried through the identical procedure. Although the phosphomolybdic acid procedure is somewhat cumbersome, the reagent is very sensitive and capable of detecting trace quantities of nonionics derived from ethylene oxide.

In the titration method, the nonionic agent is precipitated in hydrochloric acid solution by addition of a known amount of ferroevanic acid. The precipitate is filtered and washed with aqueous hydrochloric acid in which is dissolved sodium chloride. The combined washings and filtrate are then titrated with standard zinc sulfate solution to determine, by difference, the amount of ferrocyanic acid consumed in complex formation with the nonionic agent. The amount of nonionic in the original sample is calculated by means of an empirical factor determined from known quantities by the same procedure. Again, the method is useful, provided it is employed as a comparative method. For nonionic agents having fifteen or more oxide units in the hydrophilic polymer the precision of the method deteriorates.

Quantitative determination of nonionic agents by means of hydroxyl values using phthalic anhydride-pyridine reagent has been proposed. This method is of limited value since many commercial nonionics are contaminated with impurities containing hydroxyl structures, such as the polyethylene glycols, which are formed by the reaction of ethylene oxide with water rather than with the hydrophobic material. Small amounts of ethylene glycol or low molecular weight polyethylene glycols introduce large errors in the

*Paper presented at 42nd annual meeting of the Chemical Specialties Manufacturers Association, Inc., New York, Dec. 6, 1955.

- FIGURE I -



determination of the average molecular weight of nonionic agents. particularly those in the higher molecular weight range. The Rast Method (depressing of the melting point of camphor) and the Menzies-Wright Method (elevation of the boiling point of benzene) also provide insight into the average molecular weight of the nonionic agent but vield little information regarding the chemical nature of the hydrophobic structure or the hydrophobic-hydrophilic balance of the nonionic agent.

To date the most productive approach to a quantitative method has been the determination of the oxyethylene content of the nonionic agents using a modified ethoxyl determination(5) to estimate the size of the hydrophilic polymer. In the ethoxyl procedure, a sample containing nonionic agent is treated with hot hydriodic acid which dethe polyoxyethylene composes structure. The ethyl iodide and ethylene thus formed are collected and determined volumetrically in standard solutions of silver nitrate and bromine, respectively. The polyoxyethylene content of the sample is calculated from the sum of the equivalents of ethylene and ethyl iodide recovered.

The modified ethoxyl procedure offers a convenient and precise means of complete quantitative analysis if the hydrophobic-hydrophilic balance and the chemical nature of the hydrophobic structure of the particular nonionic agent being analyzed can be determined. A novel approach to characterizing nonionics as to hydrophobic-hydrophilic balance and chemical nature of the hydrophobe has been achieved by relating the "cloud point" (the temperature at which nonionic agents separate from dilute aqueous solutions as a second liquid phase) with the apparent density. Using representative samples of nonionic agents derived by the addition of ethylene oxide to known hydrophobic structures such as tall oil, rosin alcohols, alkylphenols, alkyl mercaptains and the higher molecular weight aliphatic alcohols, ap-

parent density values and the cloud points of 0.5 per cent solutions of nonionic in water were determined. A plot of cloud points in degrees, Centigrade vs. apparent density, was then made (Figure I). The values plotted for nonionics derived from a particular type of hydrophobe fall in a characteristic band which serves to differentiate those nonionics from the nonionics based on other hydrophobic materials, and thus provides a method for characterizing nonionic agents. This method is based on the observation that the density of an ethylene oxide adduct, as well as its solubility in water, increases with increasing length of the polyoxyethylene hydrophil. The density of the hydrophobe prior to oxyethylation is dependent on the chemical species. Hence, two nonionics having the same cloud points but different densities are recognized as having different hydrophobic components.

By using this method for characterization of nonionic detergents together with a quantitative determination of the weight concentration of ethylene oxide in the hydrophilic polymer, the analyst can estimate the amount and chemical nature of nonionic agents in unformulated concentrates, in commercial products, and in wash baths.

Acknowledgments

THE authors are indebted to Dr. S. M. Livengood and Miss Jean Dering of the Mellon Institute, Pittsburgh, Pennsylvania, for the analytical values reported in this

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Kent Joins Tussy

Seymour Murray Kent has joined Tussy Cosmetiques, New York, as package designer, it was announced recently. For the past five years Mr. Kent had been asso-

ciate art director for Helena Rubinstein, Inc., and Gourielli, Inc., New York, where he was responsible for point of sale displays and all product design.

Unilever Analysis

Unilever Ltd. (British) and Unilever N. V. (Dutch) keep their books in an identical manner and have identical boards of directors. If one firm cannot pay its dividend. the other helps out and vice versa. Yet they are two companies and, between them control over 500 subsidiaries. This information gleaned from a 110-page report published recently by Smith, Barney & Co., New York investment firm.

In addition to detailed data concerning Unilever, the book contains a six-year statistical comparison of Unilever with Procter & Gamble Co., Colgate-Palmolive Co., and General Foods, Inc. Unilever's sales in 1954 amounted to \$4,024, 802,000. Shares are traded here in the over the counter market in the form of depositary receipts. These receipts are registered with the issuing bank and supported by Dutchcertificates, in the case of N. V., and by registered stock in London in the case of Ltd. Shares are priced at about \$1,300, which, according to the study, is 9.1 times 1954 earnings, when the net per share was \$141.93 and share and dividend payments were \$36.96.

The Unilever organization is the largest manufacturer of soapand margarine in the world, the report claims. In addition it is engaged in making chemical papers, cosmetics, toilet preparations and food. One of its subsidiaries, United Africa Co., is the greatest singleenterprise in Africa.

Irving Trust Co., depositary for the Dutch corporation announced last month a Unilever dividend to holders of American depositary receipts amounting to 25 percent in stock and 66 cents in cash. The cash dividend is payable on present and new shares, representing a dividend rate for 1955 of 6.54 percent of par compared with 51/4 percent in 1954.

Detergents in Sewage

By F. J. Coughlin*

Procter & Gamble Co. Cincinnati

EQUIREMENTS for water are constantly increasing, both for household and industrial use. Consideration of the problem of adequate future water supplies raises questions about the proper disposal of all types of waste, including domestic sewage. One approach to the waste disposal problem is through the research and other programs which are being set up by industry and by Federal, State, and local agencies.

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For some time now, water supply and sewage treatment people have shown interest in detergents. This interest seems to lie in the possible effects, if any, of the normal use of detergents on water supplies and in sewage treatment plants. Detergents are sometimes associated with problems of frothing, sedimentation, and coagulation difficulties in water treatment plants. In the treatment and disposal of domestic sewage, the normal use of detergents is said, in some instances, to cause frothing and to retard the biological processes of decomposition. The research program of the Association of American Soap & Glycerine Producers undertakes to determine whether there is any connection between the difficulties reported and the normal use of detergents, and, if so, to what extent. These problems had existed before the advent of detergents and it would be expected that they would increase in severity as the population increases.

The interest of our industry



in cooperating in the solution of water supply and waste water disposal problems goes back a good many years and our association and industry want to play our part in attempting to determine the facts and ease the problem. The industry is glad to have a common interest in these problems with many able and conscientious groups, including the sewage and water treatment operators, the sanitary engineers and chemists involved in water supply and waste water disposal, the Federation of Sewage & Industrial Wastes Association, the American Water Works Association, the U.S. Public Health Service, and the Ohio River Valley Water Sanitation Commission, known for short as Orsanco.

Conflicting Opinions

S OME of the people interested say that detergents are causing no difficulty. Going to the other extreme, the opinion is also expressed that detergents are causing difficulties now and are likely to cause further difficulties in the future. The most frequently expressed

opinion seems to be that the information available does not give cause for major concern and that steps should be taken to obtain additional facts to answer the questions raised. This appears to be the thinking of U.S.P.H. and Orsanco and expresses the attitude of the Soap Association Technical Committee.

Until the time when satisfactory answers to all these questions are available, our industry will wish to take sound constructive action and cooperate with others as a matter of broad public responsibility in seeking the possible solutions to these difficult problems.

Definition of Detergents

DY way of definition, the term "detergent" is used in this discussion to refer to the complete product as it is found in the package on the grocery shelf or in barrels or drums for general bulk industrial uses. In homes, detergents have grown to where their sales are well over half the total of all washing products. Detergents contain surface active agents sometimes referred to as surfactants, and in addition they may contain inorganic and organic builders. Of the surface active agents, alkyl benzene sulfonate, a derivative of petroleum, often referred to as ABS, is used more extensively than any other. The most important builders used are the complex phosphates.

For those interested in further information on the characteristics and behavior of detergents, papers by Haney¹, Gowdy², and Hoyt and Flett³, are recommended as they pertain to water and sewage

^{*}A report of the technical advisory subcommittee on research of the Association of American Soap & Glycerine Producers, presented as a paper at the annual meeting of AASGP, Jan. 27, 1956.

treatment questions. The significance of the quantitative aspects of the behavior of detergents is not always recognized. At extremely low concentrations, detergents do not possess the same characteristics — such as foaming ability or emulsifying properties — which they show at the higher concentrations suitable for cleaning purposes.

To obtain the kind of suds that the housewife likes in her dishpan, she may use about 3,000 parts per million or three-tenths of one percent of the packaged synthetic detergents. This would be equivalent to about six hundred parts per million or six-hundredths of one percent of surfactant.

Typical concentrations of detergent likely to be present in domestic sewage have been reported by Haney with 53 parts per million as the highest value1. This would be equivalent to 10 to 15 ppm of surface active agent, assuming, for the purposes of obtaining a maximum figure, no decomposition or dieaway. The concentration of surface active agent present in surface waters would therefore be considerably lower because of dilution effects, and in some instances might be zero. Some of the difficulties in water treatment have been attributed to as little as one to four parts per million of detergent.

To give some idea of just how small one part per million is, one pound in five hundred tons is one part per million — or one 1-1/4 pound package of household detergent in 150,000 gallons of water is one part per million. 150,000 gallons of water would just about fill a tank 20 feet in diameter and 65 feet high. It is remarkable that methods can be developed to find such trace quantities.

One manifestation of the technical interest in this problem has been the development of a certain amount of literature which associates detergents with the difficulties encountered. Examined critically in the light of the chemistry and behavior of detergents, it is apparent that proof has not been es-

tablished that detergents necessarily create any ill effects. Also, it is quite evident that other factors might have caused the adverse effects which have been reported and further it could very well turn out, when all the facts are in, that detergents do not produce the difficulties for which they are blamed.

Froth in Sewage Treatment

FOAM first reared its frothy head in sewage treatment plants long before the advent of detergents. Now, when the froth develops to photogenic heights, it is likely to receive considerable newspaper publicity which more frequently than not associates it with detergents. In 1947, references to frothing in sewage treatment plants began to appear in the technical literature and the trade press, and there was some speculation then about whether or not detergents might be the cause. However, it was assumed that sewage plants would be able to handle the relatively small amounts of detergents which would find their way into sewage even if usage was at a maximum. This seemed reasonable since frothing had occurred before the introduction of detergents, and since there are many other foaming agents which might very well be present in sewage or could be produced during the oxidation and decomposition of the sewage.

The first opportunity for the soap industry to offer help in a specific situation came early in 1951. At that time, a sewage treatment works developed a froth about eight feet high. Naturally, in Texas! San Antonio, to be exact.

There were no methods of analysis to determine how much detergent was present in the sewage or to evaluate the possible breakdown of detergents during treatment. San Antonio proceeded to make a study of their problem in which Procter & Gamble cooperated^{4,5}. Experiments showed that the froth could be produced or it could be made to disappear at will simply by lowering or raising the

amount of activated sludge solids recirculated through the aeration tanks. Furthermore, from detergent usage and from the amount of sewage treated, the San Antonio people calculated the quantity of detergents that might be present in the sewage. The concentration was so low that it was not conceivably capable of producing the kind of froth which developed.

With two hundred parts per million (two-hundredths of one percent) of suspended solids, which is a low level in the aeration tanks, the frothing difficulty occurred. This froth was made to disappear through the simple expedient of raising the suspended activated sludge solids above a critical level of about 1400 ppm. At a high solids level of thirty-five hundred parts per million, or roughly, four-tenths of one percent, even as much as two hundred and fifty parts per million of packaged detergent product did not create frothing. From this and much more evidence obtained in the San Antonio tests, it was reasonable to conclude that at least in this instance synthetic detergents were not responsible for the frothing troubles.

The principles developed at San Antonio were then verified at a smaller plant located at Bryan, Ohio, which operated under different conditions than that at San Antonio. Several detergent brands were added to the aeration tanks at Bryan. In all cases, the addition of detergent to the tanks did not change the frothing picture.

Observations indicate that not many sewage works encounter a significant froth on their aeration tanks, although some plants do experience a slight continuous foam, which apparently is not extensive enough to cause trouble. It seems to be an unusual situation when the froth grows to troublesome heights. Sewage treatment people are developing methods for controlling frothing, independent of what might be the cause.

It seems premature for anyone to conclude that detergents should shoulder the blame for this frothing. It would be about as logical as concluding that detergents cause the foam on beer, in the case where a small granule of detergent had been added to a glass of beer. While it is true that detergents are used extensively, are good foamers, and produce froth at high concentrations, these reasons hardly seem to be sufficient to justify the conclusion that they cause the froth in sewage treatment plants. It is apparent, of course, that other foaming agents — and there are many of them — are present in sewage.

The San Antonio experience was followed by difficulties which occurred a little later in New York, Philadelphia and Los Angeles and which were featured on the front pages of the newspapers. In this period there were more frequent references in the trade and technical press to detergents as the possible cause of the frothing in sewage works. Thus, it became obvious that something more should be done, if the industry did not want the public to accept by default the unproved assumption that detergents were to blame .

Biological Degradation

THE frothing experiences in sewage works led to some apprehension and speculation to the effect that some of the detergent components, particularly the ABS, might be stable enough to resist decomposition and breakdown in sewage treatment and might pass on unchanged into surface waters, such as rivers and lakes. These apprehensions arose even though lack of sound analytical procedures made it impossible to obtain reliable objective measurements. Thus, there was no real proof that such things were happening.

The California Research Corporation saw the importance of developing fundamental information on the fate of ABS in sewage treatment processes and undertook a practical scale study. An unequivocal method of analysis was used, employing ABS tagged with radioactive sulfur. This work reported by House and Fries at the New

York Sewage and Industrial Waste Association meeting in New York City Jan. 19, 1956 shows that in the activated sludge plant in which the tests were made, eighty to ninety percent of the ABS was destroyed by the normal sewage treatment process. This is the same efficiency as obtained on normal sewage in this plant.

Analysis of ABS

IN view of the fact that methods of analysis for the extremely low concentrations of ABS or other surfactants in water and sewage were inadequate, it was soon apparent that an analytical method which would give reliable results was needed in order to determine the extent of the problem.

A method known as the methylene blue procedure has been used rather generally in the past and it is only recently that its weaknesses are coming to be recognized. Unfortunately, many people have relied on the methylene blue method and quite a bit of literature is based on it. It is far from satisfactory because urine, tea, coffee, and distilled water extracts of such materials as straw, leaves, and rotted wood - all of which contain natural surfactants - appear by this method to contain ABS when, in fact, it is not there. The A.W.W.A. Task Force Report points out that the natural production of surface active agents is considerable and that raw waters may be expected to contain a variety of natural surfactants.

Of course, the methylene blue method is still suitable where a quantitative result is not essential and when the concentration of ABS is obviously so low that it is insignificant. For example, using this method which may give fictitiously high values, the Ohio River at Anderson Ferry, Ohio, has been ranging from about two-hundredths of one part per million to fifty-six hundredths of one part per million, based on three samples per week over the past year. Even if the entire amount of "apparent ABS" were real, there is no need for checking the Ohio by more laborious and time-consuming methods.

To develop a reliable method of analysis which is unaffected by interfering substances is the mission of the Soap Association's sub-committee on the analysis of ABS. Such a method will not only make it possible to deal with the problem in a quantitative way but will be a basic tool for further research.

In giving top priority to the analytical problem, the Soap Association technical committee is following the suggestions of the Ohio River Valley Water Sanitation Commission and the American Water Works Association Task Group on Detergents.

As a matter of fact, the Ohio River Valley Water Sanitation Commission's interest in the possible effects of detergents stimulated the formation of the present Soap Association sub-committee on the analysis of ABS. Orsanco set up a detergent sub-committee as part of the chemical industry advisory committee. This sub-committee, in turn, invited companies engaged in the manufacture of detergents and detergent raw materials to cooperate in the development of a valid analytical method. The U.S. Public Health Service at the Taft Engineering Center in Cincinnati also was invited to join in the project. For a while this group proceeded on an informal basis. Later on, since all the industry members of the informal group were members of the Soap Association, it was a natural move for them to become an official committee sponsored by the association. The Soap Association committee has had five meetings in the past two years and it is estimated that the ten committee members have spent over 17,500 man hours on laboratory tests and experiments. The new analytical method should be considered a noteworthy accomplishment.

To make a long and highly technical story as short and as nontechnical as possible, the new method involves the measurement of the

(Turn to Page 67)



Lever launches

New Heavy Duty

"Wisk," a new heavy duty detergent of Lever Brothers Co., New York, comes in pint and quart size cans. They feature dripless spout and red, yellow, white and blue design.

Blue in color, "Wisk" is packed in pint and quart size cans supplied by Continental Can Co., New York. The cans are lithographed in red, white, blue and yellow. They feature a polyethylene plastic dripless pour spout. The name of the product appears in blue on a white background. A yellow swirl appears at the top of the can on the front portion and swings down around the name. The front name panel is reproduced on the back of the can in smaller size, above the instructions for use, which appear in white reverse lettering on an overall bright red background.

The new Lever heavy-duty liquid detergent is being introduced in four mid-west markets early this month, having previously been tested in "thousands of homes and with every type of family wash," according to its maker. "Wisk" is being

ISK," new heavy-duty liquid detergent of Lever Brothers Co., was announced Jan. 20, by William H. Burkhart, president of Lever. Designed to compete di-

rectly and vigorously with powder, detergents, Lever says it has been working on the product for seven years to come up with something that does a better job than any soap or detergent ever made.

Divider for mass floor display and easy shelf stocking is feature of new "Whisk" zip-open case. Tray eliminates time

consuming job of replenishing units on store shelves. Individual trays are part of each case of new liquid detergent.



Liquid Syndet

introduced in St. Louis, Grand Rapids, Indianapolis and Cleveland. A heavy introductory advertising, promotion, and public relations program, including a teaser campaign, will launch the product.

"Wisk" is packed in a zipopening case on a tray which fits on the shelf and serves as a divider for mass floor displays. The oversize red plastic top has been specially treated to receive a price mark. The pint size retails for from 37 to 39 cents and quarts are 67 to 69 cents.

Lever claims the pint can occupies less than one-half the shelf space of one large size box of heavy duty detergent powder.

Use directions call for ½ cup in top-loading washing machines; ¼ cup in front-loading washers. In addition to its use for clothes wash-



New zip-opening case is feature of "Wisk" packaging. Tape is torn, as shown above, and top of case is removed. Bottom serves as tray for "Wisk" cans. Self-advertising trays conveniently fit on grocery store shelves and also serve as dividers for mass floor displays.

ing, including fine fabrics, nylons, Orlons, Dacrons and other manmade fabrics, the product can be used for cleaning hard surfaces, according to the maker. It may be used to clean discolored kitchen cabinets, dull soiled linoleum floors, weather-beaten and rust-stained screen doors, bathtub rings, yellowed refrigerators, greasy stoves, and dishes. Fine colors hold fast when washed in "Wisk," according to Lever.

(Turn to Page 193)

Oversize, bright red plastic tops for "Wisk" have been specially treated to receive price stamp marking, simplifying stamping operation.



After removal of top of case by zip-opening, bottoms of cases act as trays and become dividers for mass displays, as shown in cut below.





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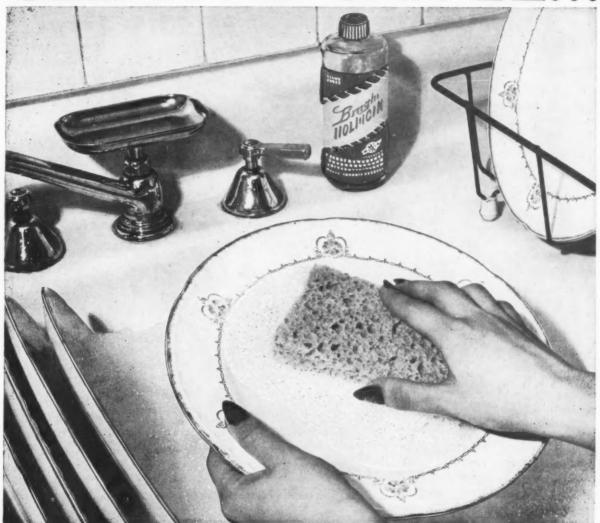
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WITH TRITON X-100

Dishes, glassware, cutlery, silverware, pots and pans—all of them come from the sink extra clean and sparkling bright when the high foam, high detergency of Triton X-100 is put to use in liquid household detergents.

How Triton X-100 Improves Cleansing. Triton X-100 is not only highly effective in removing soil, but also in keeping removed soil from being redeposited. It further increases cleansing efficiency by emulsifying oil and grease. Because it's a non-ionic surfactant, the detergent activity of Triton X-100 is unaffected by hard water. Versatile Triton X-100 promotes thorough cleansing of all surfaces—from plastics, rubber, glass, china, and pottery to silver, copper, aluminum, iron, and stainless steel.

Liquid household detergents clean many things around a home. While their principal use is in the kitchen, the housewife may expect her liquid detergent to clean floors, walls, windows, appliances and other surfaces. In all these applications high detergency ratings and high foaming are important. To give your product these properties include TRITON X-100 in your formulation.

For samples of Triton X-100, formulation suggestions, or additional data, see your Rohm & Haas representative or write today to the address below.

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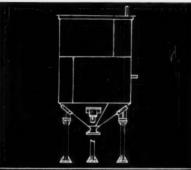
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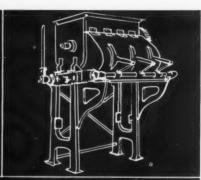
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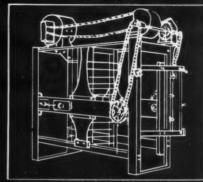
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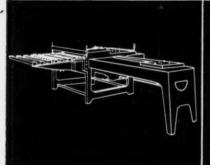
114 years ago Houchin started producing soap making machines.

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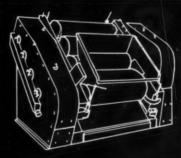
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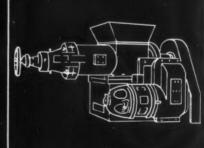
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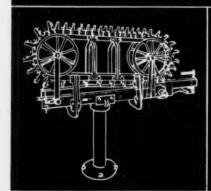
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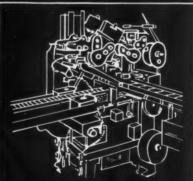
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Production SECTION

Checking Fill of Cans

In publishing "The Story of Glim" in the December, 1955 issue of Soap & Chemical Specialties, the marketing aspects of the product were emphasized. Since we did not mention the filling problem, which was a very real one to B. T. Babbitt Co., J. J. Ludwig, advertising and sales promotion manager of the X-ray department of General Electric Co., in Milwaukee, has furnished us with the following article and pictures to publicize this side of the "Glim" story.—Ed.

HEN B. T. Babbitt, a leading manufacturer of household cleansers and detergents, decided to package their liquid household detergent "Glim" in metal cans, they faced many new problems which required unique solutions. "Glim" had always been packaged in glass bottles. As expanding production demanded changes in bottle capacity and styling, the production line which was installed in 1948 was modified to accommodate these changes.

The basic concept of a glass bottle remained, but with the advent of an opaque lithographed metal can, the entire concept changed. The problems of breakage and labelling were eliminated. However, filling which had previously never concerned the company became an acute headache. A glass bottle was always filled to the beginning neck and the customer was assured of full measure by a simple glance. With the opaque can, accurate control of the fill became an acute requirement. An obvious solution was to weigh the cans at some position in the production line.

"Hytafill" liquid-level checking machine of General Electric Co. inspects fill of cans at speeds of up to 900 per minute.

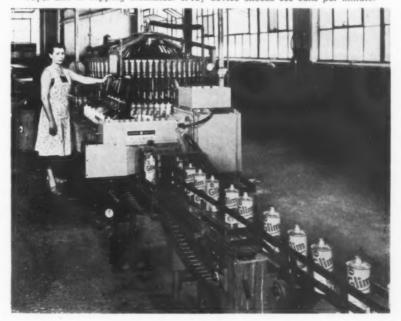
With line speeds in excess of 150 per minute, it was found that only one type of the available check weighing machines could keep pace.

Weighing machines commonly used for this checking operation function mechanically. They pick up the cans and if weight is sufficient to depress the pick-up levers, allow it to continue along the line; if weight is insufficient, the can is detoured.

The announcement by the General Electric Company of their new "Hytafill" liquid-level checking machine has proved to be the solution to this problem. The "Hy-

tafill" is capable of inspecting cans at speeds of up to 900 per minute provided that the line is smooth and rejected cans be removed from the production line sufficient'y fact. The "Hytafil" liquid-level checking machine has gained wide acceptance in the food processing industry where the cans are completely filled. It measures full without mechanical contact with the cans under inspection. A narrow X-ray beam is flashed through the cans and, if fill is inaccurate, triggers a mechanism which knocks the can off the line into a recep-

A "Glim" liquid detergent filling line showing cans being filled (rear, left), moving through "Hytafill" liquid level checking machine and along conveyor line to capping machines. X-ray device checks 900 cans per minute.





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CHARACTERISTICS OF THE "PISONI SAIX" PLANT

It is the only plant on the market which continuously cools soap with simultaneous extrusion of a continuous bar maintaining unchanged total fatty acids content as determined before cooling.

It comprises one special cooling plodder which, working without any endless screw, can extrude soaps made with fats having a high or low melting point even if containing high percentages of water or builders,

- -Pure soaps having 62-63% T.F.M.;
- Soaps having T.F.M. from 35% to 62-63%;
- Soaps having T.F.M. 62-63% with 25÷30% rosin;
- Soaps having 56% T.F.M. with 25-30% rosin, filled with silicate or soda carbonate;
- Mixing soaps having 100% cocoanut oil;
- Olive oil foots soaps;
 Pure peanut oil soaps.
- Soaps with Phenol;
- Dry, pure or filled, soaps having T.F.M. contents from 35 to 70-72%;
- Transparent laundry or toilet soaps having 70-72% T.F.M.

Savings: Steam, 100% - Labor, 70% - water, 50% power, 50%.

A fully automatic and continuous operation - only one workman to run the plant-small space requirements-

absolutely no scraps—automatic perfuming.

By our process foaming capacity is highly increased cakes undergo no deformation during storage neither moisten package.

These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour.

We also manufacture:

Complete plants for pilled toilet soaps — chips — synthetic detergents in beads form.

Free and without any obligation, ask for tenders references-catalogues-soap samples-plants inspec-

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Office

... JTT/MW.

14th July, 1955.

We are very pleased to inform you that you SAIT 2C Cooling Plodder is working most satisfactorily.

We are now utilising the machine for all our Bar Soap production which includes a wide variety of scens all varying qualities and

We have found from experience that these scape are far and by the older conventional methods. They have better superior to scaps made by the older conventional methods. washing and lathering properties and also do not distort or twist in storage.

The savings in labour and scrap scap have far exceeded our expectations. The guaranteed output has been maintained in practice and the power and water consumption are well within your specifications.

In our opinion this machine is the most revolutionary piece of machinery introduced in the scap making industry in recent years. We can assure you of our complete satisfaction with its performance in all respects, and also we much appreciate the helpful service and advice which been offered by you at every stage during the erection and trial periods.

We have every confidence $\delta N_{\rm c}$ recommending this machine to any producer of household scap.

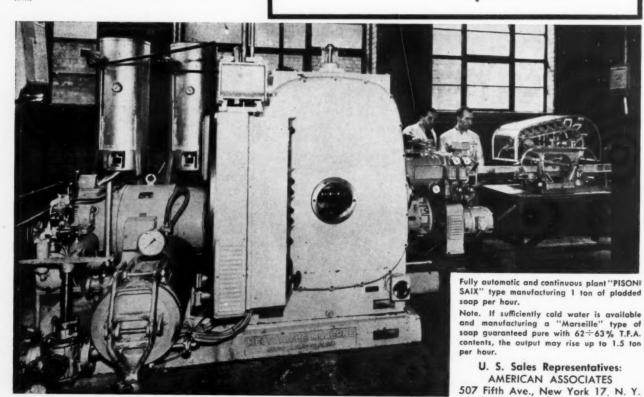
Yours faithfully.

Dr. T. Terleaki. (Director).

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However, B. T. Babbitt found that the uncapped "Glim" can presented an entirely different situation. Working in co-operation with General Electric and Conveyor Systems, Inc. of Chicago, an efficient and practical rejector was developed. This was basically a dual conveyor having a small airactuated swinging gate at the inspection point. An underfilled can passing through the "Hytafill" Xray beam initiates a rejection signal. This signal operates a conventional solenoid valve, admitting air to the reject gate cylinder. The rejected can is then pushed sidewise into the parallel reject conveyor. After a sufficient number of rejects accumulate, the filling machine operator returns them to the filling machine for refill. Also, any damaged or leaking cans which are not filled at all are caught in the reject line.

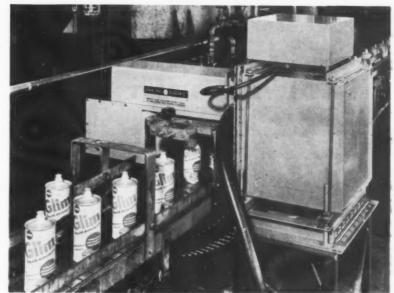
The X-ray-eyed "Hytafill" has proven to be an infallible guard assuring the public of full measure and B. T. Babbitt of its customers' continuing good will.

The inherent accuracy of fill-checking is extremely high with these new level checkers. They respond to level variation as little as 1/32". In practice, the accuracy of the "Hytafill," however, depends on the smoothness of the conveyor line in presenting the cans for inspection. Translated into more useful terms: in the brewing industry alone (which turns out more than six billion cans per year), as little as 1/32" variation per can makes a difference, one way or the other, of 47,500,000 cans annually.

Very little space is required by the "Hytafill" level checker. A solid $12'' \times 17''$ supporting platform is sufficient for its detector and its small control unit can be set up anywhere within 50 feet of the detector.

Once controls are set initially, it is only necessary to switch the level checker on or off. And cleaning is simplified since both components can be washed down with either steam or water.

Unlike mechanical devices which have many moving parts



Close-up of General Electric Company's "Hytafill" liquid level checking machine showing cans of "Glim" liquid detergent of B. T. Babbitt Co., New York, emerging from the device. No mechanical contact is involved.

subject to wear and tear through use, the level checker's only moving part is the shutter that operates the X-ray beam. It needs no attendance, requires little or no conveyor adaption and works in conjunction with present equipment.

Another difficulty eliminated by "Hytafill" level checkers is the jam of cans that may result from weighing machine failures. With four cans per second or more rushing up to the weighing unit, a jam not immediately halted by an attendant could be followed by a virtual hail of cans. With "Hytafill", even though cans stream through at rates of up to 15 per second, failure of the unit would not interfere with the flow of the production line, since no mechanical contact is involved. The only function lost would be that of checking itself.

It might be added that no radiation problem exists for the user, since the beam is quite diminutive and all shielding required is already included in the unit's design.

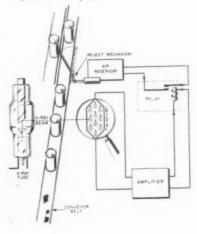
Am. Potash Names Two

American Potash & Chemical Corp., Los Angeles, announced last month the appointment of Frank McGrane to its general sales department and of Chester R. Beam as a research engineer.

Mr. McGrane will work on special assignments out of the firm's main office. He was formerly Southern California district sales manager for the agricultural chemicals department of American Cyanamid Co., New York.

Mr. Beam will serve at the company's main plant at Trona. He was previously associated with the U. S. Bureau of Mines at Albany, Ore., where he served as an inorganic chemist.

Schematic drawing showing how the "Hytafill" machines operates. Unit occupies small space.



Y.

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Model B-2 Vacuum Filler

provides efficient continuous provides emicient continuous production, filling two con-tainers at a time. Handles a wide variety of liquids and semi-liquids. Has automatic product supply, vacuum is ad-justable and flow regulated for accurate, clean filling. Fills a wide renee of containers up to wide range of containers up to 41/8" dia. round or rectangular. Send for Bulletin B-2.

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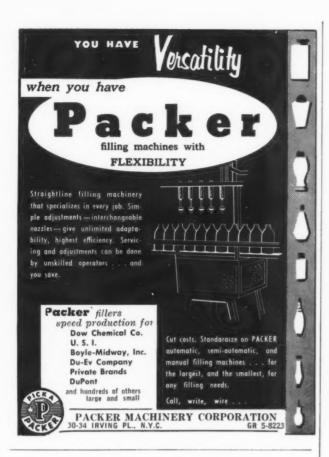
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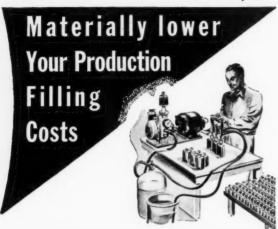
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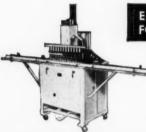


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William Scheck

Detergents in Sewage

(From Page 53)

amount of ABS in the sample in question, first by removal of the ABS by absorption on activated carbon. This begins to sort out the ABS from the larger amounts of other organic matter present. Then the ABS is removed from the carbon column and next a further sorting out by chemical methods is accomplished. When a sufficiently large quantity of pure ABS has been quantitatively obtained from the sample, the final step is to measure it qualitatively and quantitatively by the use of an infrared spectrophotometer. This new method, checked out carefully by the committee, should soon be ready for publication.

The Soap Association technical group is the first to recognize that the method as it has been evolved will not be practical for the average sewage works or water treatment operator to use routinely. A simpler method for making routine analyses is still needed and we hope to come up with something on this, too. The Taft Sanitary Engineering Center of the U.S. Public Health, has reported on a new colorimetric short procedure called the "Methyl Green" method. The Monsanto laboratories have also been doing some extracurricular work and are about ready to report on another short method. The study of shorter methods will continue to be an important part of our future program.

Water Treatment

I N the water treatment area, the need for a more active program became apparent when the quiet on the waterfront was disturbed at Wheeling, West Virginia, around Thanksgiving of 1953. Large quantities of froth formed on the Ohio River and in the water treatment plant there. The froth was accompanied by bad taste, discoloration, and extreme difficulty with filtering and settling. The river had

been at an extremely low stage and almost in pool. This low flow brought about the presence of high concentrations of various organic and inorganic substances in the river water. When frothing occurred, the river water appeared to contain about one part per million of "apparent ABS," using the methylene blue procedure which includes the amounts of any interfering substances present.

With such a low level of ABS in the water, it was extremely difficult for anyone to postulate how detergents might have produced the foam. On the other hand, the foam contained a high concentration of ABS which was present chiefly on finely divided solids held and suspended in the foam. This, while difficult to explain, was still not conclusive. Since that time, incoming water with the same concentration of ABS by the methylene blue method has been treated by the water works at Wheeling without any trouble. In retrospect, a fair and reasonable point of view seems to be that detergents from domestic sewage were not the principal cause of the Wheeling froth, if indeed they had any appreciable effect at all.

Phosphates

ORE recently, in instances M where water treatment plants have encountered difficulties with coagulation and sedimentation, there has been some speculation that the complex phosphates from household detergents might be involved. It is true that if enough complex phosphates are present, they could retard coagulation and sedimentation in water treatment. In fact, it is because of this particular property that these materials have become such an important constituent of household detergents. However, before the conclusion is reached that they cause such troubles, there should be an answer to the question: "Are the complex phosphates or other phosphates present in sufficient concentration in the surface waters going into the

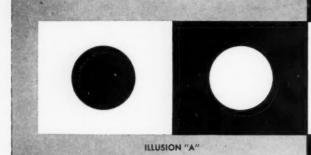
water treatment plants in question to produce the effects reported?"

It is difficult to measure the possible effects of the complex phosphates from the household use of detergents on water treatment processes. The reason is that the complex phosphates undergo changes during the washing process itself, during their travel through the sewers, and in the sewage works. Furthermore, any residue which passes on to surface waters is expected to undergo further changes because the phosphates are susceptible to being decomposed by the plant and animal systems present in all surface waters.

There are many other unanswered questions. For example, "What are the conversion products, if any, which reach the water treatment plants?" "How quickly do the complex phosphates revert to the simpler forms and what effect, if any, is produced by the conversion products?" "If the phosphates have any effects, how much of the effect is contributed by the phosphates from household detergents, how much by the naturally occurring organic and inorganic phosphates, how much by the phosphates from fertilizers, how much by phosphates from industrial plants, and how much from any other source?"

A phosphate committee was recently organized by the Soap Association to explore questions which have been raised. This hard-working committee includes our own members and, in addition, nonmember organizations in the phosphate industry who are interested in participating. The committee has started out on the problem of establishing good methods of analysis for the types of phosphates in the low concentrations which might be found in water and sewage. H. V. Moss of Monsanto, who is an active member of several other committees in this general field, is the able and efficient chairman of the phosphate committee.

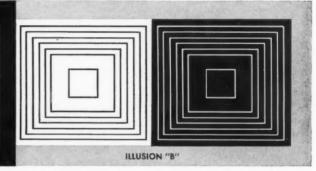
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to help others to investigate some of these difficult problems. After a succession of several drought years in Kansas, serious water quality problems have been encountered in various parts of the state, and there is speculation that detergents are a factor in causing the difficulties. In fact, last year a bill was introduced in the Kansas legislature which in essence would have made it unlawful to put detergents into a public sewer. Working on the principle that legislation would not solve the problem, but that research would, our Association offered its help. A representation from our technical advisory sub-committee on research and our committee on analysis discussed our activities in detail with people from the Kansas State Board of Health, and a report was made at the April 1955 joint meeting of the Kansas Sewage & Industrial Wastes Association and the Kansas Section of the American Water Works Association.6 A few weeks ago, the Kansas State Board of Health people asked us to cooperate further in studying current problems and the Technical Committees have been glad to take steps to assist in the present situation.

Britain

BRITISH government com-A mittee on synthetic detergents is at present studying the question there. The Association's activities have been reported by members of the technical committees to their associated companies in Britain, and in this manner the information which our technical committees have developed has been made available to the British committee. It is hoped that the work which is under way in the United States may be generally applicable to the British situation and may be helpful in solving the sewage treatment problems and any water quality problems which exist over there.

Orsanco Sub-Committee

T O a great extent, because of the Wheeling experience right in its own bailiwick, the Ohio River Valley Water Sanitation Commis-

sion appointed its detergent subcommittee, mentioned previously. Prior to this, E. J. Cleary, executive director and chief engineer of Orsanco, had suggested a program of investigation that the sub-committee might consider. It is indicative of Cleary's foresight that after these suggestions were reviewed carefully by those interested in the problem, it is essentially the program which is being followed at the present time. Soon after its appointment, the Orsanco Detergent Sub-Committee extended an invitation to the Soap Association to help in the investigation of this broad industry question since it extended beyond the confines of the Ohio Valley. The Soap Association was ready and willing to cooperate and accepted the invitation. It was a natural development for the Soap Association to take over the analytical problem as has been described and to organize and underwrite further constructive research investigations.

Research Projects

THE technical advisory sub-committee on research was asked to recommend the problems for study, where they should be placed, and to determine the budget required to finance the work. The Association then solicited and obtained the funds required from member and interested non-member companies.

The question as to the type of ABS to use for study was resolved by making a composite of the alkyl benzene from the four suppliers on the sub-committee on research. From this composite, Wearn and Ross of Colgate have produced a composite ABS for use in the Association studies.

A system was set up where liaison with each of the projects is being handled by one or more members of the research committee, and each of the projects has been visited by members of the committee at least once this year.

Here are the four projects that have possibilities of doing a lot of good. The first project to be

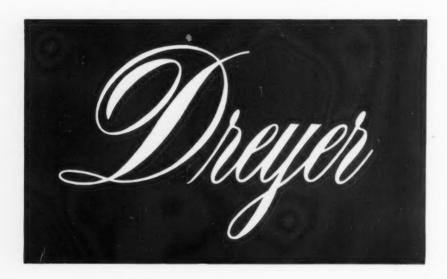
placed by our sub-committee on research, was at M.I.T. The Continental Oil people had been discussing with M.I.T. the detergent problem from the point of view of possible biochemical degradation of the surface active agents. It is obvious that breakdown of the surface active agent to the point where surface activity is destroyed would probably remove it as a cause of the frothing in sewage works, and would completely eliminate the problems in water treatment associated with the surface active agents present in detergents. The work is under the direct supervision of Professor Ross E. McKinney in the Civil Engineering Department. Professors Clair N. Sawyer and Rolf Eliassen are also associated with the project.

The second project was placed at the Sanitary Engineering Research Laboratory of the University of California at Berkeley, under Professors E. S. Crosby and P. H. McGauhey. They are following up on the work of the California Research Corporation, mentioned previously, and are making a more comprehensive study, under a wider range of conditions, of the fate of ABS in sewage treatment and in surface water supplies.

The University of Wisconsin project is directed by Professor G. A. Rohlich and L. B. Polkowski. They are working on the causes and prevention of frothing in sewage treatment plants. Frothing systems free of detergents will be studied, as well as those containing detergents. As the headlines usually associate detergents and frothing, the Association obviously has a vital interest in getting to the bottom of this problem.

The fourth project is under the supervision of Professors J. C. Dietz and R. S. Engelbrecht at the University of Illinois. It will study, as a first phase, the complex phosphate components of detergents, and later ABS, in water treatment plants. To get at the question of possible amounts that may be present in surface waters, it will survey

There's something different about



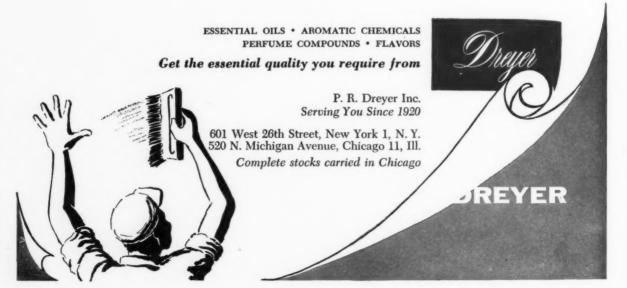
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Now, for the first time, there is a systematic way to select surface-active agents with the best possible balance of desirable properties for your formulation. Random evaluation of unrelated surfactants is no longer necessary. The new Pluronic Grid, shown on the next page, makes this possible. It is both practical and easy to use . . . helps you to simplify formulation and processing . . . suggests in advance the characteristics you can get using a Pluronic or a combination of Pluronics.

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The Pluronics are a unique series of nonionic surface-active agents which are 100% active in *all* forms—liquids of varying viscosities, pastes, flakes, powders, and cast solids.

The first commercial example of a block-polymer-type surfactant, the Pluronics offer a controlled variability and flexibility not found in other surfactants. By varying their molecular weights and hydrophilichydrophobic ratio in small increments, an over-all balance of desirable properties is provided: controlled sudsing, a range of surface-active properties, stability, low hygroscopicity, dedusting properties, and a low order of toxicity.

The Pluronics are easy to formulate . . . blend easily with common builders. They permit you to compound products which are completely dust-free and exceptionally free-flowing . . products which offer desirable and distinct advantages over competition!

Choose a tailor-made surfactanfro

The properties you want in your product can be "made to order" by varying the molecular weight and/or the hydrophilic-hydrophobic ratio of the Pluronics. Just select the surfactant you need from the Pluronic Grid!

Pluronics different from other nonionic surfactants

Most chemists know that polyoxyethylene compounds are water soluble—no matter how high their molecular weight.

For many years, it was generally assumed that polyoxy propylene compounds would also be water soluble. However, the fact is: at a molecular weight of about 800-900, polyoxy-propylene compounds change—from water soluble to water insoluble.

Investigation at Wyandotte revealed that if water-soluble polyoxyethylene groups were added to both ends of the water-insoluble polyoxypropylene chain, a new series of surface-active agents would develop.

These surfactants could have a hydrophobic base of any controlled length and any hydrophilic-hydrophobic balance . . . achieved by adding amounts of ethylene oxide varying from 10% to 90% of the final molecule.

This is the basis of the Pluronics, which can be represented by the following simplified structure:

 $HO(C_2H_4O)_a(C_5H_6O)_b(C_2H_4O)_cH$

The Pluronic Grid illustrates the possible molecular range obtainable.

Molecular flexibility basis for Pluronic Grid

The Pluronic Grid offers you a wide choice of carefully controlled surface-active agents. They range in molecular weight from 1000 to over 11,000; have a controlled hydrophilic-hydrophobic balance, varying from materials that are almost water-insoluble to materials that have no cloud point—even at the boiling point of water.

How to use the Pluronic Grid

Because of the wide range of molecular weights obtainable in the Pluronics—and because of complete freedom in controlling the hydrophilic-hydrophobic balance—many properties of the Pluronics can be plotted as trends across the Grid.

By observing these trends, the formulator can select—from the Grid—the Pluronic having the best balance of properties for his particular application. After only a few laboratory tests, he can narrow this area down to the best Pluronic for his formulation.

Known trends for several general properties of the Pluronics are shown; other specific trends can be determined easily by evaluating a few Pluronics from various positions on the Grid.

Pluronic nomenclature

To simplify the naming of the Pluronics, they are identified by a letter (L, P, or F) and a two-digit number. The letter identifies the physical form of the particular Pluronic: L for liquid, P for paste, F for flake. The first digit identifies the arbitrary molecular-weight ranges of the hydrophobic base as indicated by the column to the left of the Grid. The second digit suggests the approximate percent of ethylene oxide in the total molecule.

Thus, Pluronic L64 is a liquid having a hydrophobic-base molecular weight of 1501-1800, and 40% of the total molecule is ethylene oxide.

Example I: Formulating a machine-dishwashing compound

The surface-active agent used in a machine-dishwashing compound should have the following properties: good rinsing; very low foam; good wetting; good detergency; good lime-soap-dispersing ability; good dedusting properties; extremely low toxicity.

Rather than initiate a random evaluation of all the unrelated surface-active agents now commercially available, the formulator can save research time—and direct his efforts in an organized approach to the problem of selecting a suitable detergent—by referring to the Pluronic Grid.

Very low foam is important in a machine-dishwashing compound. And it can be seen that the lowest foaming Pluronics are in the lower left quadrant of the Grid. The property trends also indicate that the best wetting and penetrating action is in the lower left quadrant . . . this area also has excellent rinsing.* The area of best detergency is in the central position of the Grid. The best lime-soap-dispersing properties are found in the upper right quadrant. The cloud point and solubility of the Pluronics increase in moving toward the right side of the Grid ... the formulator may choose a Pluronic having any degree of solubility that is desired.

Since rinsing, foaming, and wetting are the most important properties, the formulator should evaluate Pluronic L62, L63, L42, and L43 in his particular formulation. This systematic approach to the problem can eliminate much fruitless work in unprofitable areas.

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An added advantage of all the Pluronics, not indicated by the Grid, is their extremely low toxicity... and liquid grades give permanent dedusting.

* It should be noted that L61, L31, and L81 were not considered in this application because of their relatively poor rinsing characteristics. Added in small quantities to any of the Pluronics, they will effectively suppress foam. Field tests have shown that a 1:9 ratio of L61 to L62 or L63 effectively lowers their foam without adversely affecting the rinsing characteristics.

Turn the page for more examples...

Infrom the Pluronic Grid

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PLURONIC GRID

% POLYOXYETHYLENE (HYDROPHILIC UNIT) IN TOTAL MOLECULE

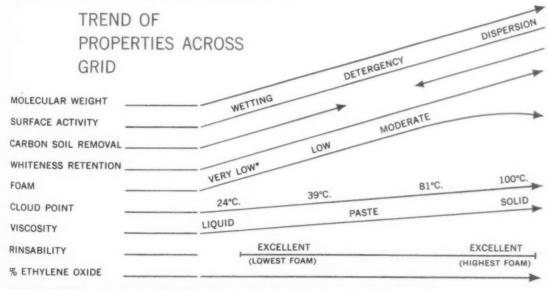
(SECOND DIGIT) (1) (2) (3) (4) (5) (6) (8)50 10 20 30 40 60 70 80 MOLECULAR WEIGHT OF POLYOXYPROPYLENE HYDROPHOBIC BASE (FIRST DIGIT) (8) 2101-2500 181 184 P85 F88 1801-2100 (7) 1501-1800 (6) 1201-1500 (5)1001-1200 (4)

L33

PLURONICS L61, L62, L64, L44, P75, AND F68 ARE COMMERCIALLY AVAILABLE.

801-1000

OTHER PLURONICS ARE AVAILABLE IN SAMPLE QUANTITIES.



EMULSIFICATION— ALL PLURONICS HAVE FOUND APPLICATIONS AS EMULSIFYING AGENTS.

*ABOUT 10% PLURONIC L61 (BASED ON THE TOTAL WEIGHT OF PLURONIC) EFFECTIVELY REDUCES THE FOAMING OF THE OTHER PLURONICS.

Cut down trial and error with the Pluronic Grid

Example II: Formulating a homelaundry compound

The properties desired in a good home-laundry compound for use in automatic washing machines include the following:

Good detergency—center of Grid. Good whiteness retention—upper right quadrant. Low to moderate foam—any part of Grid, depending upon degree of foam desired. An attractive-looking compound having good flow characteristics—liquids, pastes, or flakes can be selected from the Grid to regulate "dampness" of the compound.

Other desirable properties which are not apparent on the Grid include:

Stability with hard water and unusual builders—all Pluronics are chemically stable to detergent builders and hard water. No derma-

tological effects—all Pluronics are exceptionally good in this respect. Dedusting—all Pluronic liquids and pastes provide permanent dedusting.

Consideration of the above indicates that Pluronics in the central portion of the Grid—e.g., L64, P65, P66, or P75—are most promising. F68 could also be considered for improving whiteness retention and the free-flowing characteristics of the compound.

Example III: Choosing a good dye-leveling agent

The properties of a dye-leveling agent should include the following: excellent dispersing action; chemical stability; good penetration; relatively low foam; high cloud point; convenient physical form.

Since all of the Pluronics are stable in any of the chemicals that might be encountered in a dye bath, we can look to the Grid for the best balance of other properties.

The best dispersing properties are in the upper right-hand quadrant in the area of highest molecular weights.

Inasmuch as the cloud point increases with the percent of ethylene oxide in the molecule, the highest cloud points would be on the extreme right of the Grid—favoring F68, F77, and F88.

The best penetrants are in the lower left quadrant, and the lowest foam would be there also.

Since dispersing and high cloud point are of primary importance, these properties indicate the use of Pluronic F68, F77, or F88. This has been substantiated in practice, where F68 has been found especially effective in the dyeing of wool and synthetic blends.

The Pluronics have a growing list of commercial applications!

Agricultural Products: Emulsifiers; emulsion stabilizers; dispersing and wetting agents; dust-laying agents.

Cosmetics: Deodorants; hair preparations; lotions; oral-hygiene products; shampoos; toothpastes.

Formulated Detergents: Laundry products; dairy cleaners; detergent sanitizers; floor cleaners; rug cleaners; mechanical-dishwashing products; scouring powders.

Latex and Rubber: Stabilizers; viscosity regulator for styrene-butadiene latices; vulcanizers.

Metal Cleaning: Alkaline metal

cleaners; aluminum anodizing; passivating; steel pickling.

Metal Cutting: Water-soluble cool-

Paint: Pigment dispersing; improved leveling, spreading, and brushability; viscosity control.

Paper: Cleaning papermaker's felts; leveling and stabilizing latex coatings.

Pharmaceuticals: Dispersants for antibiotics; solubilizers for antibiotics and vitamins.

Petroleum: Demulsifiers; dispersants for oil-well acidizing formula-

tions; wetting agents for secondary recovery.

Plasticizers: Methylmethacrylate, phenol-formaldehyde, urea-formaldehyde, and polystyrene resins.

Soap: Soap-synthetic and all-synthetic bars; lime-soap dispersant.

Textiles: Desizing formulations; antistatic agents; continuous hypochlorite bleaching; dye leveling; kier boiling; soaping-off prints; softening warp sizes.

Water treating: Boiler water; scale prevention in industrial water supplies.

The Pluronic Grid can help you choose the proper surfactants for testing, but only a thorough evaluation in your own laboratories can give you the full scope of what the Pluronics can do for you. Write today for samples, data sheets, and other technical information. Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.



HEADQUARTERS FOR ALKALIES

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CHLORINE MURIATIC ACID • CALCIUM CARBONATE • CALCIUM CHLORIDE GLYCOLS • CHLORINATED SOLVENTS • SYNTHETIC DETERGENTS OTHER ORGANIC AND INORGANIC CHEMICALS

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the type and amounts of phosphates present in some of the waters in the State of Illinois, using the analytical tools supplied by the Phosphate Committee. Also, it has set up a pilot plant unit to study the settling operation in water treatment.

In the judgment of the technical group, our research projects have been placed in excellent hands and cover the difficult areas of water and sewage about as effectively as any four projects could. These explorations, when completed, should reveal new and valuable information.

Summary

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THE technical committees of the Soap Association hope that this report gives a clear picture of the background and purposes of the research which the Association is sponsoring in the water supply and sewage treatment areas.

The technical group hopes that an impression is gained of the considerable amount of effort that is going into the study of the problem by representatives from the member companies. This report should convey the picture that this is a completely non-competitive activity in which the cooperation of the interested people and companies is excellent.

This report cannot have missed conveying that there are a number of interpretations of the facts which are available. If in this situation the industry had chosen to remain aloof, it is almost certain that the unproved and unfair interpretation that detergents are to blame for the numerous difficulties reported would have been accepted by default.

The technical group hopes that those who do not agree with our evaluation of the situation will accept the comments in this report impersonally and constructively, as they are intended.

The technical committees urge all those interested in this problem to take an objective and scientific point of view, to investi-

gate further if there is any reasonable doubt, to accept as facts only such material as is properly documented, and to limit conclusions to the data and facts available.

The technical committees appreciate the demonstrated interest of the Association management people and the cooperating non-member companies who have already appropriated \$128,000 to carry the program along for a couple of years.

In conclusion, the technical committees hope that all those interested are convinced by the information in this report that it could very well develop that detergents have not been responsible for all the things blamed on them. The technical committees are interested in working with others in this field and are looking forward in the next couple of years to finding the answers to at least a few of the difficult questions before us. They hope that the information acquired will represent a real contribution to the technology of water supply and waste water disposal. The technical committees recognize that the water supply and sewage treatment areas are of great importance to the public and they want to assure the people in these fields of the Association's active and continued cooperation.

References

- "Characteristics & Effects of Synthetic Detergents," A.W.W.A. Task Force Report, by Paul D. Haney, —J.A.W.W.A., Vol. 46, No. 8, August 1954.
- "Chemical Structure & Action of Synthetic Detergents," by W. R. Gowdy—Sewage & Industrial Wastes, Vol. 25, No. 1, January 1953.
- "Adsorption of Synthetic Detergents Affects Use and Waste Disposal," by L. H. Flett, L. F. Hoyt and J. E. Walter — Journal of American Oil Chemists' Society, Vol. 32, No. 3, March 1955, Pages 166-68.
- "Froth Formation and Synthetic Detergents," by W. N. Wells and C. H. Scherer Sewage & Industrial Wastes, Vol. 24, No. 5, May 1952, Pages 670-679.
- 5. "Action of Detergents in Sewage Treatment—A Study by Industry," by W. R. Gowdy — Sewage & Industrial Wastes, Vol. 25, No. 3, March 1953, Pages 255-261.

"Soap Manufacturers' Report of Research on Synthetic Detergents," by F. J. Coughlin — J.A.W.W.A., Vol. 48, No. 1, January 1956.

New Michel Literature

M. Michel and Co., New York, recently issued a new 12-page booklet, "Survey of Cachalot Brand Fatty Alcohols." The book contains descriptions and uses of "Cachalot" C12 to C18 higher alcohols. It features solubility charts and infra-red spectra of a large line of straight-chain aliphatic alcohols. Copies of the booklet are available on request to M. Michel and Co., 90 Broad St., New York 4.

New Rhodia Booklets

Three new booklets which describe the use of perfume oils in various applications were issued recently by Rhodia, Inc., New York. The books present a description of the firm's perfume oils as used in cream shampoos, aerosol products and shaving creams. Copies of any or all of the booklets are available on request to Rhodia, Inc., 230 Park Ave., New York 17.

Metallic Soap Booklet

Metasap Chemical Co., subsidiary of Nopco Chemical Co., Harrison, N.J., has announced a new 30 page booklet on metallic soaps. The booklet, which traces the development from the 18th century to the present day, includes listings of Metasap metallic soaps, including chemical and physical characteristics and industrial applications.

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1956 Silicone Guide

The 1956 edition of its Reference Guide to Silicone Products was published last month by Dow Corning Corp., Midland, Mich. Almost 150 of the most generally used silicone products are described, 18 of which were introduced within the last 12 months. The two-color bulletin consists of twelve pages carrying text, illustrations, charts, tables and graphs. Products are grouped by physical form and cross-indexed by uses.

Your Cleaners "TIRE OUT" too Fast?



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NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1. N. Y., and remitting 50c for each copy desired. For orders received frem outside of the United States the cost will be \$1.00 per copy.

No. 2,724,702. Method of Improving and Simplifying the Cold Milling of Soap and Product Obtained Thereby. Donald E. Marshall, Minneapolis, Minn., assignor to Micro Processing Equipment Co., Inc., Savage, Minn. The patent describes a cake of milled toilet soap characterized by the fact that the soap base material from which the cake is formed consists essentially of a homogeneous and thoroughly coalesced milled mixture of fatty acid potash soap and fatty acid soda soap in the ultramicrocrystalline state. This state results from subjecting the mixture of potash and soda soap while in the solidified state, and at a temperature below the crystalline reversion point of the soaps to a mechanically produced shearing action. The ultramicrocrystalline state is evidenced by a rubbery translucent waxy texture, good cold welding properties, a substantially non-swelling gel structure, freedom from objestionable soap dish jelly formation, high viscosity and excellent solubility and lathering action. The percentage of fatty acid potash soap in said milled mixture is 5 percent to 30 per cent thereof, and the balance being fatty acid soda soap, considering the mixture in the anhydrous state.

No. 2,723,240. Alkyl Aryl Sulfonate Detergent Solutions, patented by F. Neil Baumgartner, Cranford, N. J., assignor to Esso Research and Engineering Company. Disclosed is an aqueous detergent solution consisting essentially of water and .04% of the sodium salt of a monosulfonated benzene to one position of which is attached the third carbon atom of a straight chain alkyl radical containing 11 to 12 carbon atoms.

No. 2,724,653. Non-Toxic Insecticides, patented by Frank L. Todd, Jr., Martin, Tenn. A non-toxic compound is patented for long term use on meats to prevent iniury by skipper flies, ham beetles, mites and other insects; comprising pyrethrins as active agent, piperonyl butoxide and nitrate of soda as a pentrating agent for carrying the active agent into the meat.

No. 2,722,497. Pesticidal Compositions and Their Use, patented by Jack S. Newcomer, Grand Island, N. Y., assignor, by mesne assignments, to the Pennsyvania Salt Manufacturing Company, Philadelphia, Pa. The patent covers a composition prepared for use in combating fungi and insects, comprising a surface active agent, and at least one monocyclic unsaturated five-membered carbocyclic compound containing the molecular fragment defined by

wherein C is a nuclear carbon atom; wherein n represents an integer from 1 to 2; wherein Q_1 represents the grouping=C=O of which C is a nuclear carbon atom; wherein Q_2 represents an unsaturated group selected from the class consisting of

$$=C=0$$
, $-C=C-$, and $=C=NH$

in which unsaturated grouping selected from said class each C is a nuclear carbon atom, and wherein the remaining valences on the five-membered carbocyclic ring which are not a part of said molecular fragment are satisfied by at least one of the group consisting of hydrogen, oxygen, chlorine, alkyl, chlorinated alkyl, alkenyl, chlorinated alkenyl, alkylidene and chlorinated alkylidene, said composition forming an emulsion with water upon agitation therewith.

No. 2,725,334. Modified Lanolin, patented by Lester I. Conrad, Highland Park, and Galmen Motiuk, New Brunswick, N. J., assignors to American Cholesterol Products, Inc., Milltown, N. J. Described is a chemically modified lanolin especially suitable for pharmaceutical and cosmetic use on the skin, which modified lanolin is free of side reaction materials and consists of the product resulting from the reaction of forty to one hundred per cent of the hydroxyl groups of lanolin with one of the group consisting of acetic anhydride, propionic anhydride, ricinoleic acid and benzoic anhydride, washing out excess acylating agent with a wash media, and removing the residual wash media, residual acid and side reaction materials by vacuum distillation; the product being characterized by the facts that it is practically odorless and is completely soluble in mineral oil in concentrature of twenty-five degrees centigrade.

Also covered is a new composition especially suitable for pharmaceutical and cosmetic use on the skin, which composition comprises a mixture of mineral oil and up to ten percent of a product resulting from the reaction of forty to one hundred percent of the hydroxyl groups of lanolin with one of the group consisting of acetic anhydride, propionic anhydride, recinoleic acid and benzoic

anhydride, washing out the excess acid with a wash media, and removing the residual wash media, residual acid and side reaction material by vacuum distillation, the composition being characterized by the fact that it constitutes a clear solution at twenty-five degrees centigrade without the addition of a solubilizer.

No. 2,722,478. Process for Using Trichloromethyl Thiocyanate as a Biocide, patented by John F. Olin, Grosse Ile, Mich., assignor, by mesne assignments, to Pennsylvania Salt Manufacturing Company. The patent teaches a process for terminating the life cycle of nematodes, fungi, bacteria, and plants, comprising exposing the same to lethal concentrations of trichloromethyl thiocyanate.

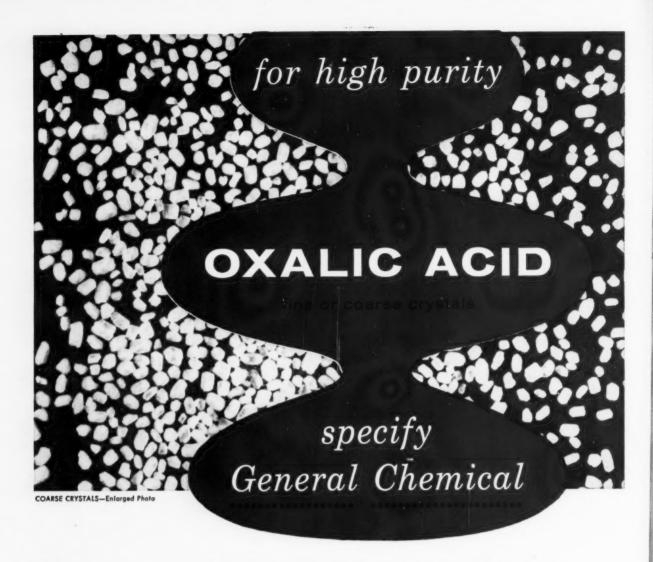
No. 2,722,483. Method and Composition for Inhibiting the Growth of Microorganisms, patented by Joseph Winkler, New York, N. Y., assignor to Fumol Corporation, New York. A composition of matter is described for inhibiting microorganisms, comprising as preserving agent a mixture of 83% to 50% by weight of a dehydroacetic acid compound selected from the group consisting of dehydroacetic acid and its edible salts with 17% to 50% by weight of a synergist consisting of a benzoic acid compound selected from the group consisting of benzoic acid and its edible derivatives.

No. 2,723,217. Dentifrice Composition Containing Tyrothricin, patented by Sol D. Gershon and Oscar W. Neiditch, Chicago, Ill., assignors to Lever Brothers Company, New York, N. Y. A paste dentifrice is patented comprising from about 0.005 to about 0.5% of tyrothricin and from about 20 to about 80% of a mixture of polishing agents comprising from about 1 to about 76% of an insoluble salt of a polymetaphosphoric acid, and from about 76 to about 1% of a member of the group consisting of calcium and magnesium phosphates and corbonates.

Rug Cleaner Found Safe

"Easy Glamur" chemical rug cleaner is the first product of its kind to be passed as an insurance risk by the board of underwriters, it was claimed last month by Jack Hosid, president of Glamur Products, Inc., Syracuse, N. Y. A one million dollar insurance policy covering both persons and property has been granted by the Saint Paul Mercury Indemnity Co., St. Paul, Minn.

"Easy Glamur" is described as a mild chemical concentrate, odorless, non-toxic and lacking harmful or noxious vapors. It comes in six sizes ranging from half pints at 98 cents to commercial sizes.



USES

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For producing or processing leather and furs, textiles, dyes, pentaerythritol, plastics, drugs and chemicals

For laundry sours and rust removers . . .

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PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

ONTINUING last month's discussion of the problems of retirement, we note that many articles and books are written from time to time regarding activities for retired persons. Much of the discussion pertains to preparation for retirement and where to spend the declining vears of life. Positive ideas for retirement centers, industrial club houses, travel, reading, farming, chicken raising, do-it-yourself activities, sports like golf and other pursuits are proposed as pastimes for the individual who faces retirement or has retired. These activities look alluring before retirement but most of them become boresome. The majority of retired persons go into a slump after giving such activities a brief trial. Many then become unhappy and "peculiar". Others just seem to fade away lacking any further desire to live. Those who are actually happy with their retirement activities are the exception, rather than the rule.

It has been my privilege, in recent years, to live in localities which are populated with a high percentage of retired men. Retirement is a common topic of conversation. One frequently hears them referred to as "used-to-be" individuals. Most of them have spent most of their lives with companies which have not helped to prepare them financially, psychologically or socially for the abrupt transition from steady every day work to the leisure time forced upon them by retirement. Executives are beginning to realize that this has become a greatly neglected social-economic problem which is becoming increasingly grave.

Two proposals to solve this question are being heard with increasing frequency. The first suggestion is that if industry doesn't do something about the problem of

retirement, then government will, and at greater cost. The second solution is for industry to develop a program to prepare its employees for retirement, well in advance of the retiring age. Something will have to be done before long to make this largest single identifiable class better satisfied with their status.

While this problem of retirement is one that is common to industry in general, we are chiefly concerned with its effect on production and technical people. Without chemists, entomologists, bacteriologists, engineers, etc., our industry cannot continue to progress as it has in recent years. The shortage of technicians, aggravated by the retirement of many, must be remedied by a constructive approach.

Quite recently I was invited to attend a meeting of retired technical men. The question of the shortage of scientific personnel arose. At the meeting it was brought out that only three quarters of the demand for them is being satisfied. To bring our colleges up to par so they may give proper instruction, it was estimated that half of the college graduates in the science and engineering professions will be required as teachers. The teaching profession is not made attractive to college gradu-

Dr. E. G. Thomssen



ates and the number of teachers is diminishing. This is a grave situation.

The chairman of the group asked how many of the retired scientists had been requested to use their knowledge in industry or education. Not a single one answered in the affirmative. Yet three quarters of them indicated they would willingly contribute a part of their time and wide experience to help alleviate the shortage of technical personnel in industry and education if called upon to do so. It was the consensus that much knowledge was being wasted that could be put to constructive use. One individual suggested that retired scientists visit elementary schools to persuade more youngsters to take up science as a career.

In the years ahead American industry faces a big shortage of science and engineering college graduates. Production men already have difficulty in maintaining their technical staffs. Yet, we hear that the production of chemicals will be stepped up sharply in the next five years. Unless some answer to this problem of finding more technically trained personnel can be found, a very serious situation faces us in the future. Rather than letting the technical knowledge and experience of retired chemists and engineers go to waste, some use should be made of their services. It would help the men themselves and industry as a whole.

Discussing the problem of using retired chemists with a successful executive in our field recently, I found that he had employed retired European chemists for the past decade. The plan has paid off handsomely for him, he stated. His firm hires retired European chemists for a nominal salary. They work on approved projects in places of their own choosing. Although their lot is worse than in the United States, if they produce worthwhile results they are amply rewarded for their efforts. If not, they have at least been advantageously occupied.

There have been cases, of



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Typical Specifications:

PHYSICAL APPEARANCE:	Light yellow liquid.			
ODOR TYPE:	Cinnamon, Cassia.			
SOLUBILITY:	10 parts soluble in 12 parts of 80% Ethyl Alcohol.			
STABILITY:	Stable in presence of alkalies—of excellent lasting quality.			
REFRACTIVE INDEX n 20 :	1.6040			
SPECIFIC GRAVITY $\frac{20}{20}$:	1.036			
QUALITY:	Carefully produced to rigid specifications and checked in our modern control laboratories.			
SUGGESTED USES:	A notable and successful raw material for the production of OIL CASSIA SYNTHETIC.			

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course, in the United States in which retired technical men have established consulting laboratories where they can work on problems that interest them. These, too, have been fruitful.

Because of the nature of their work, production men over the years have been concerned with producing things. Travel, sports, reading, gardening, light farming, card playing and similar pastimes are not the solution to their retirement problem. Such diversions are not as satisfying in reality as they were in anticipation to the retired production man. By nature, training or experience they feel they must be doing something that produces tangible results to be happy. Their work and even their diversions must be constructive, even though not as substantial or steady as in the younger years of their lives.

The assets of retired oldsters are not being given the proper attention by our industry. Some means of utilizing their experience and knowledge will go far toward solving, not only the problem of the unhappy individual, but in filling the need and demand for capable production and technical men now and in the future.

Automatic Air Filters

UTOMATIC air filters, which stay clean for from three to six months and find a wide variety of applications, are made by Air Maze Corp., Cleveland 28, Ohio. They may be used for engines, motors, compressors, for ventilating and air conditioning equipment or for any other device using air or liquids. A condensed catalog is available upon request.

Durable Poise Balance

A DURABLE balance with a capacity of 0.5 grams to five kilograms is available from Ohaus Scale Corp., Union, N. J. The micrometer poise permits the use of the balance for a range of from 0.5 to 1000 grams without the use of weights. This results in easier, faster weighings.

New Anti-corrosive

A NEW coating, Truscon "Chemfast," for eliminating corrosion in plants is being featured by Truscon Laboratories, Detroit 11, Mich. The material is a tough epoxy resin that may be applied to protect wood, masonry or metal either indoors or outside. It is not affected by alkalies, acids or moisture. Full information is available on request.

Bulk Material Handling

AVINGS in volume shipments of dry granular materials are possible using "Airslide" cars. These are filled and emptied with air conveying systems that operate automatically and by remote control. Bags, drums and other containers are eliminated. The loading and unloading is fast and simple, and breakage and leakage is reduced. Full information regarding the system is available from General American Transportation System Corp., Chicago 90, Ill.

Isopropanolamines

COAPS made from isopropanolaonines are finding increased use as emulsifiers and detergent builders. These soaps may be used to emulsify "soluble" mineral oils. Technical data on its line of mono-, di-, and tri- or mixed isopropanolamines, as well as several other amines, are available from Carbide & Carbon Chemicals Co., 30 F. 42nd St., New York 17, N. Y.

New Plastic Packaging

E XPERIMENTATION with polyethylene packages made by Bradley Container Corp., Maynard, Plax Corp., Hartford, Conn., and Continental Can Co., New York, is now being undertaken by many makers and marketers of products now packed in jars and tubes. Polyethylene containers with metal ends are being tested. The metal ends reduce the cost of the container and make them competitive with other types of packaging. Bradley has developed a plastic inner lining material for use in polyethylene containers to make

them less permeable. With the new liner, liquids, oils, pastes and creams can now be packed in squeeze type packages.

Automatic Bag Filler

N automatic bag filling and A sealing machine that fills freeflowing products in quantities of up to one ounce at the rate of up to 65 per minute is available from Brown Bag Filling Machine Co., Fitchburg, Mass. The unit fills, opens and seals envelopes. Model PF100 is the popular size, according to the manufacturer, who claims that it is used by many nationally known manufacturers.

CSC Offers Tris Amino

Tris Amino, short for tris-(hydroxymethyl)aminomethane, is one of the new nitroparaffin derivatives introduced recently by Commercial Solvents Corp., New York. Suggested for use in the manufacture of cleaning compounds, cosmetic, textile and other specialties, the compound reacts with higher fatty acids to form soaps with unusually strong emulsifying powers. It has a high boiling point and low combining weight, and, according to CSC, is the only tri-hydroxy molecule commercially available having a primary amine group.

ASTM Soap Standards

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ASTM Standards on Soaps and Other Detergents (With Related Information), prepared by Committee D-12, published by American Society for Testing Materials. Philadelphia, September 1955, 176 pages, six by nine inches, paper, price \$2.50. This booklet brings up to date the previous edition of March 1952. Of the total of 42 specifications and tests, six are new and 12 have been revised. The book carries 17 specifications for soaps and soap products, nine for various alkaline detergents, and 15 methods of analysis covering soaps and detergents. Definitions pertaining to these materials are also included.

Another reason why Armour is your one best source for fatty acids

Armour Oleics
rank highest in
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stability—
here's Mackey
test proof!



According to laboratory tests Armour White Oleic has 42.8% greater oxidation stability than the next best brand of oleic. After 5 hrs., 15 min. the cotton with Armour low titer White Oleic shows no oxidation. The other passed the point of internal combustion and charred. In this same test, five brands of white oleics reached 105° C. in an average of 4 hr., 2 min. The cotton soaked with Armour White Oleic remained stable for 7 hrs., 30 min.

No. of hrs. to reach 106° C.	1	2	3	4	5	6	7	
Armour low titer white eleic	-		110000000000000000000000000000000000000					
Brand "A" white oleic			- 7 eA	antiger and an ellipsis				
Brand "B" white oleic	Constant Constant							
Brand "C" white pleic								
Brand "D"								Ī
Brand "E"							\neg	_

Armour White Oleic resists oxidation in Mackey Test 2 hours and 15 minutes longer than nearest competitive white oleic.

Whether you use white Oleics or red oils, low titer or high, Armour Oleics offer the greatest resistance to oxidation. In cosmetics and soaps, this greater stability means your products will store longer, look and smell fresher in use. In lubricating, scouring or finishing textiles, this also means Armour Oleics withstand high temperature processing. And your textiles won't develop unpleasant odors. These oleics have low pour point, low unsaponifiable and high oleic content.

Only Armour uses fractional distillation and solvent crystalilization to produce a complete line of fatty acids—yet you pay no premium in price! Advantages such as these make Armour your one best source for fatty acids. For information and samples, simply write us listing your specifications.



ARMOUR CHEMICAL DIVISION

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Products and PROCESSES

Laundry Ironing Aid

A product designed to give laundry a softer finish and to help the iron slip more easily over clothes has been suggested in the February issue of "Chemmunique" put out by Atlas Powder Co., Wilmington, Del. Atlas suggests that some chemical specialty manufacturer might want to make and market the product. The formula follows:

Atlas G-1300*	4.5%	approx.
CMC (Carboxyl		
methyl cellulose)	3.0%	+4
Water	2.5%	44
*Atlas G-1300 is polyethy	lene	glycerol
triricinoleate.		

The products are dissolved in the water with little heat and stirring. A small quantity is added to the last rinse water. There is no discoloration of fabrics, the material does not "build up" over a series of washings, and it helps prevent redeposition of soil in future washings. The product is covered by U. S. Patent 2,645,584, but Atlas states that a license to make the item can be arranged easily on a basis "to make everybody happy."

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Detergent Bars

Normally solid powdered non-soapy detergents can be produced in shaped form, as tablets, bars, or flakes by incorporating them in a binding preparation which is liquid when heated. Such a binder comprises a normally solid higher aliphatic acid, preferably stearic, an ester gum, and a wax having a melting point between 45° and 70°C, and preferably between 50° and 60°C. The detergent is incorporated in the previously melted binding substance, with or without addition of other materials. The mixture is allowed to cool and is then formed into tablets, bars, or flakes.

A toilet bar, thus produced, consists for example of 15 percent detergent (alkyl aryl sulfonate or the like), 25 percent binder, five

percent sodium carbonate, 10 percent starch, 10 percent talcum, clay or kaolin, five percent waterglass, and 30 percent water. The binder for this product may consist of 20 parts by weight stearic acid, one part by weight ester gum, and four parts by weight of paraffin wax (m.p. 52° to 60°C).

A household laundry bar is composed of 10 percent detergent, 25 percent binder (preferably with 0.5 percent CMC) five percent sodium carbonate, 10 percent starch, 15 percent talcum or clay or kaolin, 10 percent waterglass, and 25 percent water. The binder in this case includes 16 parts by weight of paraffin wax (m.p. as above) eight parts by weight of stearic acid, and one part by weight ester gum.

Detergents in bar or tablet form, produced by this method, are effective and do not decompose in use, it is claimed. British patent 731371, A. Blumenthal, Yeoville, Johannesburg, S. Africa.

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New Gelling Agent

A new gelling agent, Abco-Gel, is being marketed by the Abco Chemical Co., Brooklyn. The product is designed for use in emulsions and suspensions in aqueous systems and is particularly recommended for inclusion in cleaners and polishes, cosmetics, emulsion paints, and other oil in water emulsion products. From one to ten per cent of the material is used depending on the type and concentration of the gel required. One per cent is suitable for thickening solvents, oils, lubricants and glycols. Further information is available from Abco Chemical Co., 2316 Atlantic Ave., Brooklyn 33, N. Y.

Glycerine in Toothpaste

Glycerine's function as a softener and carrier for toothpaste is recognized in a new dentifrice based on tyrothricin so formulated with an insoluble salt of polymetaphosphoric acid that it inhibits lactic acid formation (U. S. Patent #2,723,217). One of the formulas which was reported to have effectiveness contained the following:

ngredient	Percen
Tyrothricin	0.05
Insol. sodium polymeta-	
phosphate	26.89
Dicalcium phosphate	26.89
Gum tragacanth .	1.33
Saccharin	0.20
Flavor	0.90
Sodium lauryl sulfate	1.14
Glycerine	18.90
Propylene glycol	1.00
Distilled water	22.70

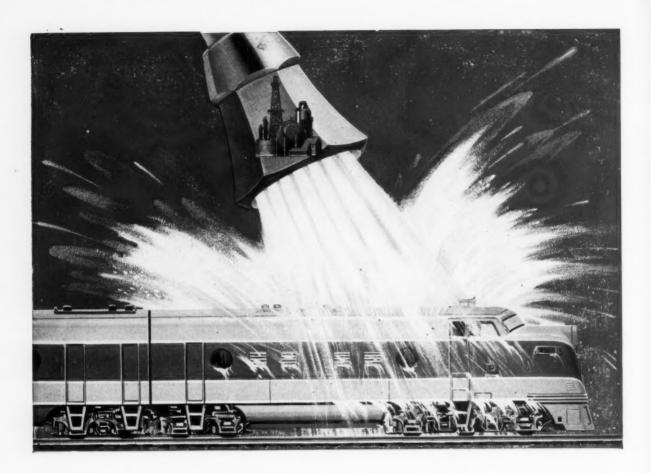
Sesamolin Structure Known

The chemical structure of sesamolin, a most potent pyrethrum synergist, has been determined by Morton Beroza, research chemist with the U.S. Department of Agriculture. Sesamolin is a sesame oil derivative which will be in increasing supply with increasing acreage expected to be devoted to sesame crops.

The booster effect on the insecticidal power of pyrethrum was discovered by Dr. Beroza in previous research on sesamolin. Discovery of its structure may facilitate development of a commercial process for extraction of sesamolin from the oil of sesame seed or may lead to the synthesis of a compound duplicating the booster effect of natural product.

Anti-Tarnish Spray

An aerosol formulation for a silver protective film based on "Elvalan" vinyl polymer and "Freon" propellant, has been developed by Kinetic Chemicals Division, E. I. du Pont de Nemours & Co., Wilmington, Del. The formula is offered free to the industry and several aerosol manufacturers have indicated plans to pressure-package the anti-tarnish formulation for household use. The aerosol applied coating gives a continuous, tough but pliable film which excludes air and fumes that cause silverware to tarnish. Insoluble in water, the product dissolves readily in mild alkaline solutions of soap and detergents such as the housewife uses for dishwashing.



FOR THAT CLEAN-AS-A-WHISTLE LOOK

Giving a train a shower and shine is an everyday affair for railroads. The trick is to do the job with minimum effort and get the train back to work promptly.

That's where the Atlantic Ultrawets come in . . . the Ultrawets provide outstanding cleansing properties. Gritty, greasy particles of dirt rinse off easily, leave a streak-free finish that dries shining-clean.

These superior synthetic detergents are one of a group of Atlantic petrochemicals (so you see a miniature oil refinery in the picture).

Naturally, these unusually able Ultrawets are also used in formulations for many other operations: from shampoos for milady to wetting agents in textile mills.

The Ultrawets are one part of Atlantic's ever-growing family of petrochemicals, for which industry is constantly finding new and profitable uses . . . in new products . . . in cost-saving manufacturing advantages

...in adding new sales-pluses to well-established products. Atlantic sales engineers are always ready to help your staff get the most from your use of Atlantic petrochemicals.

For full information on Atlantic petrochemicals and services, write to The Atlantic Refining Co., Dept. E-2. 260 South Broad St., Philadelphia 1, Pa.



Philadelphia, Providence, Charlotte,

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In the West: L. H. Butcher Co.

In Canada: Naugatuck Chemicals
Division of Dominion Rubber
Company, Ltd.

In Europe: Atlantic Chemicals SAB, Antwerp, Belgium

In South America:
Atlantic Refining Co. of Brazil,
Rio de Janeiro

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SOAP and CHEMICAL SPECIALTIES

SOAP PLANT Observer

By John W. McCutcheon

N the discussion of analyses, begun last month, a few types of analyses the writer finds useful were covered. The point was made that no one system is ideal for all situations. Each one must be adjusted to the particular requirements of the individual user. Also to be considered is the equipment available. Each laboratory has its own method of running control analyses. It is wise to follow these procedures as far as possible, both for economy of time and for the interpretation of results.

The preliminary examination of a material or product should be as thorough as possible. It may consist of a series of tests and checks done qualitatively, preferably on a micro scale to speed things up.

The writer had a professor once who could tell more about the solubility of an organic material in five minutes than most people could in several days work. Unfortunately, he stood in his own shadow, so to speak, and had a hard time putting his ideas over to his students. His method consisted of using drops of the material on a watch glass. It worked, too!

If the product is a solid, examine it under a microscope to determine if it is homogeneous, If not, see if a mechanical separation reveals anything. When examining a liquid, note its transparency, color and solubility in a few solvents. Is moisture present, and how much? Are soap or inorganic salts present? What is the pH? Generally these tests may be run off in a few minutes. If inorganic salts are present, alcohol extract the detergent and run down the qualitative tests on the alcohol insoluble for silicate, carbonate, phosphate, borate, sulphate, chlorides, etc.

The writer likes to make these qualitative tests on a scale that is fast and yet gives some indication of quantity. For example, when



making the alcohol extract, if 25 grams of material are taken, and the alcohol extract is about 5 ml., then the material probably is about 20 percent active. If the product is a powder and the moisture content is high there is a good chance that some of the inorganic salts are present as hydrates. Sodium chloride is partially soluble in alcohol, but for our first qualitative tests we need not concern ourselves with it. If present, it will show in the alcohol insoluble portion anyway.

Let us assume now that we know roughly the moisture, percent detergent and the inorganic salts and what they are. The next step might be to check for the presence of organic salts by various means. For example, does the dried alcohol insoluble char on heating? Are starch, CMC, fluorescent dyes, etc., present?

The alcohol soluble may be considered next. Actually this is the point of prime consideration here. Ash a small amount and determine if there is a residue. If so, dissolve it in a few drops of water and note whether it is alkaline, neutral or acid. Note the odor when burning. This sometimes discloses the type of raw material used in manufacturing the product, e.g., fatty, petroleum, etc. If soap is present with the detergent, make a separa-

tion at this point by adding calcium chloride, by extracting from an alkaline medium, etc.

Next test the organic for nitrogen, sulphur, and possibly even phosphorus. Recently the writer had an unpleasant experience with the latter. Generally speaking, there are not too many derivatives of phosphorus used and the tendency is to omit the test, particularly as such products are fairly stable and require vigorous methods of decomposition.

For qualitative work it is not necessary for the oxidation to be one hundred percent complete. It is suggested that strong reagents be used and plenty of time allowed for the digestion. If organic phosphates are present, the percent will be high for phosphorus, so that small amounts of product are in order, such as 0.1 or 0.2 grams. It is better to do a thorough job of digestion on a small sample than to have a partial decomposition on a large one. The undecomposed residue may be very embarrassing with the latter. It should be noted here also that sulphur may be present as a "thio" group and not necessarily as a sulfate or sulfonate. The thio bond is not very strong to acids. During these tests, particularly the decomposition ones employing strong acids or alkalis, the odors of the various fractions should be noted. The presence of fat is generally quite evident and early recognition is very helpful. Many compounds are derived from rosin or tall oil. The test for rosin should be made by such methods as that of Liebermann-Storch, as described by Karabinos (see January "Soap Plant Observer" column), which is very simple to perform and quite reliable.

Be alert also for unusual circumstances which may cause misinterpretations. On a recent product, for example, the organic gave a small amount of ash which was slightly acid. This was discovered to be the impurity from a chrome dye which was present as a coloring agent. When the percent of detergent is low, its extracted concentrate may have a high proportion



Emersol*211 Elaine increased sales appeal of premium shampoo



If the color of your product changes with age or from batch to batch, then this customer experience may interest you... Case History No. 22-42: A well-known manufacturer of premium shampoos replaced the ordinary single-distilled oleic acid in his formulation with Emersol 211 Low Titer Elaine because of its uniform color and greater resistance to color change during aging. The resultant uniform color of his shampoos produced greater consumer acceptance and subsequently greater sales.

While uniformity of color was this manufacturer's primary concern, he found also that Emersol 211's outstanding oxidation stability, superior resistance to rancidity, uniform viscosity, and low unsaponifiable content, added materially to

the overall quality and aging properties of his products. And since Emersol 211 costs no more than competitive grades, all these sales advantages were realized at no extra cost. Whatever products you are making, the replacement of an ordinary oleic acid by an Emersol Elaine will impart to them a high degree of color stability, oxidation stability, and resistance to rancidity. These factors, coupled with uniformity and all-around high quality, will make your products better, make them fresh and appealing, and keep them that way longer. So, if you are not already using an Emersol Elaine, why not order your next requirements from Emery? They cost no more than competitive grades so you have everything to gain, nothing to lose.



Fatty Acids & Derivatives Plastolein Plasticizers Twitchell Oils, Emulsifier

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

New York; Philadelphia; Lowell, Mass.; Chicago; San Francisco; Cleveland; Ecclestone Chemical Co., Detroit Warehouse stocks also in St. Louis, Buffalo, Baltimore and Los Angeles
Export: 2205 Carew Tower, Cincinnati 2, Ohio

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of such carry-over impurities.

The test for type of ion involved is left to this point because premature testing may lead to confusion. The test should be made on the alcohol extract, and when a number of detergents are known to be present, the test should be run on each one separately. A mixture of cationic and non-ionic detergents will be cationic; a mixture of anionic and non-ionic will be anionic. In certain cases the product may be amphoteric, cationic on the acid side and anionic on the alkaline side. A very convenient way to test for ion type is that given by Goldstein (see "Soap Plant Observer" column for last month), although voltages much smaller than 45 are satisfactory when using a few drops of the liquid.

The presence of multiple types of detergents generally involves differences in molecular weights. For this reason, separation by fractional distillation under high vacuum is very helpful. When this is done, the qualitative test above should be run on each fraction. Solvent separations are also possible, but are generally more time consuming due to possible portioning between the solvents. The temperature pattern of a distillation is more objective.

When a reasonable idea has been obtained as to the product under examination, then and only then should a scheme of quantitative analyses be set up as per the many methods available. If the active ingredients have been separated into what is believed to be their components, a spectrographic analysis may save a great deal of chemical work and should be run. Tests of this nature on a mixture generally are a waste of time.

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Two points of caution may be mentioned. When running qualitative tests, keep a notebook handy for jotting down the data as they are obtained. Secondly, when quantitative results are finally obtained, be sure to state precisely what they stand for. Sometimes the failure to do this can be very annoying, particularly if the data is

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part of a court case. For example, the generally accepted method for running monoglyceride in a shortening yields the alpha monoglyceride only.

The beta monoglyceride might raise the total another 15 percent or so. The result of the test should, therefore, be clearly stated as an alpha monoglyceride. Another example might be the iodine value. Generally this is reported in the case of a fatty acid derivative as the iodine value of the fatty acid fraction. It could have been reported on the basis of the entire sample!

few months ago the writer noted somewhere (he cannot recall at the moment) a continuous method of sulfonation by a French firm. This date has come to hand and the flow sheet of the process is available. This equipment is offered by the firm of René and Jean Moritz, Chatou, France. The process is a standard batch sulfonation unit incorporating a centrifuge for quickly separating the sulfonate from the spent acid. It also includes the necessary controls and proportioning pumps to make the process continuous. The description allows the use of one or two neutralizers. The reaction itself is distributed among three turbo-agitated and water cooled vessels.

F special interest is a test method for detergent evaluation using an ultrasonic transducer as the means of agitation (J. C. Sherrill and W. C. White, J.A.O.C. Soc. Vol. 33, p23, Jan. 1956). This article deals with a piece of equipment which relates soil removed to the amount of work done in terms of joules. Several examples are given. The method takes about 10 minutes per sample and may therefore be considered a "quick" method. However, the standard "Launderometer" and "Terg-O-Tometer" methods can be run in multiple units and this advantage is overcome. A multiple transducer unit might be costly to operate and control. It seems to the writer that

this type of equipment would be admirably suited to measure the efficiency of washing machine agitation by using a standard detergent. Perhaps the authors of this fine paper will take note!

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Soap Specs. Amended

Packaging and marking of liquid and paste toilet soap are affected by an interim amendment to Federal Specification P-S-624b, (dated Nov. 17, 1954), which was issued last month by the Federal Supply Service, Washington 25, D. C. The amendment calls for the following changes: Paragraph 2.1; under "Federal Specifications" insert: PPP-C-96-cans, metal, 28 gage and lighter.

Paragraph 5.2.1.1: Type I, liquid soap, shall be furnished in 1-gallon, 5-gallon, or 55-gallon quantities, as specified in the contract or order (see 6.1). One gallon containers shall be oblong conforming to type V of Federal Specification PPP-C-96 with either a class 4 screw cap or class 5 snap-on cap; 5-gallon containers shall conform to type V of Military Specification MIL - C - 124. Fifty-five gallon drums shall conform to either type II or type IV of Federal Specification PPP-D-729.

5.2.1.2: Type II, soap paste, shall be furnished in 1-gallon cans capable of containing approximately 8 pounds; in 5-gallon pails capable of containing approximately 40 pounds; or in 100-pound drums. One-gallon cans shall conform to type V, class 2 of Federal Specification PPP-C-96. Five-gallon pails and 100-pound drums shall conform to type VI of Military Specification MIL-C-124.

5.2.2. Packing: — soap packaged in 1-gallon containers, shall be packed for shipment in accordance with the appendix of Federal Specification PPP-C-96. Five-gallon pails, 100-pound drums, or fifty-five gallon drums will require no overpacking.

5.2.3.1. Marking for civilian agencies:—in addition to any special marking required by the contract or order, marking for shipment shall be in accordance with Federal Specification PPP-P-31.

5.2.3.2. Marking for military agencies:—in addition to any special marking required by the contract or order, marking for shipment shall be in accordance with Military Standard MIL-STD-129.

A proposed amendment to Federal Specification P-S-578, refers to built, low titer, powdered laundry soap. A change is suggested to 21 percent for the sum of free alkali and total matter insoluble in alcohol, the previous reading allowing 30 percent.

if you make... DISHWASHING COMPOUNDS OTHER POWDERED DETERGENT ITEMS RUG AND UPHOLSTERY CLEANERS DAIRY CLEANERS INSECTICIDES LAUNDRY DETERGENTS CAR WASHES BUBBLE BATHS STEAM CLEANERS FLOOR CLEANERS make them wit It's easy to get uniform mixtures with Orvus AB Granules. This neutral synthetic detergent, wetting and emulsifying agent blends readily and intimately with other ingredients. Orvus AB Granules offers a minimum of breakdown during mixing, stratification, settling out. It is neutral and mild and ideal for compounding products for use in hand cleaning—a feature of real importance to your employees and your customers. There's a place for Orvus AB Granules in your converting picture. For information regarding specific applications of Orvus AB-or special formulas-mail a postcard to-PROCTER & GAMBLE BULK SOAP SALES DEPARTMENT P. O. BOX 599 CINCINNATI 1, OHIO America's largest manufacturers of top quality soaps and synthetic detergents.

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Aerosol. 22 in bubble baths softens the water and prevents formation of the "ring" in the tub. It is compatible in water of hardness as high as 300 ppm calcium carbonate.

You might also explore the things Aerosol 22 does for mechanical dishwashing detergents, for rug and upholstery cleaners (does not wet-out rugs and fabrics), and in facial and hand creams. Easiest way to start is to send coupon for a sample and for our bulletin on Aerosol 22.



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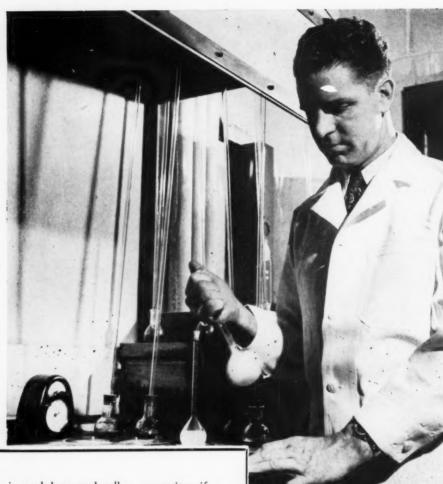
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NO GREAT SKILL is needed to undersell a competitor if a supplier is willing to sacrifice the vigilant attention to small details of production and control that insures his product's purity. Savings effected in this way seem—to us—hardly sufficient to justify that larger sacrifice of quality. And putting ourselves in the position of one responsible for the purchase of fragrance raw materials, we do believe we'd rather stake our reputation on purchases based upon quality than upon those measured solely by cost. The fact that FRITZSCHE offerings are and will continue to be products of scientific selection and control is a point to be remembered when making competitive comparisons.

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News

Economics Names Wilson

Economics Laboratory, Inc., St. Paul, Minn., manufacturer of cleaning compounds, recently elect-



John L. Wilson

ed John L. Wilson as vice-president. Prior to his appointment, Dr. Wilson had served as director of research and development for Economics Laboratory since 1933. He joined the firm in 1931 as a chemist and has been a member of the board of directors since 1953.

Dr. Wilson has had a number of his research studies published in the nation's leading professional journals, including the Journal of the American Chemical Society, Industrial and Engineering Chemistry and the Minnesota Engineer. A member of several professional societies, he was named Chemist of the Month by the Minnesota Federation of Engineering Societies in May 1950 and was awarded the distinguished service plaque of the Minnesota Industrial Chemists Forum in May 1951.

Stanson Chemical Moves

Stanson Chemicals, manufacturers of "Stanzal" and "Stanson Suds," controlled suds detergents, have moved to new quarters at 856 River Road, Edgewater, N. J. According to the announcement by Stanley J. Holuba, president, the

company, which manufactures detergents for the home laundry trade, will increase production capacity as well as incorporate private label production into their new arrangement.

New White King Managers

James E. Hunt has been appointed district manager for the San Francisco district according to an announcement by the White King Soap Company, Los Angeles. Mr. Hunt was formerly Portland district manager. Gaylord A. Meredith has been appointed to the Portland post. Mr. Meredith was formerly assistant sales manager for the midwest division.

Jackson Joins Cowles

Robert C. Jackson has joined the engineering staff of Cowles Chemical Co., Cleveland, according to an announcement by K. R. Olson, Cowles' chief engineer. Mr. Jackson was formerly production supervisor for a pharmaceutical manufacturer and design engineer for an electrical appliance manufacturer. He is a licensed engineer and received his chemical engineering degree from Clarkson School of Technology. He is attached to the Cowles plant and research laboratories at Skaneateles Falls, N.Y.

Robert C. Jackson



Oronite Names Hathaway

Norman E. Hathaway has been appointed as coordinator of marketing for Oronite Chemical



Norman E. Hathaway

Co., San Francisco, it was recently announced by T. G. Hughes, president. At the same time Mr. Hughes named three new regional sales managers. They include W. M. Burge, midwestern regional sales manager, Chicago; J. R. Stitt, eastern regional sales manager, New York; and T. M. Welton, western regional sales manager, San Francisco.

Augustus Kranich Dies

Augustus Kranich who was co-founder of Kranich Soap Co. with his son, Herbert Kranich, died January 15 in Brooklyn at the age of 86. Mr. Kranich was born in New York City on February 10, 1870 and was a graduate of New York University. In 1921, he aided his son, Herbert Kranich in founding the Kranich Chemical Co. which later became the Kranich Soap Co. He was vice-president of the company from 1921 until 1951 when he retired, handling primarily sales and being widely known in the cosmetic and industrial soap trades. He is survived by Herbert Kranich having lost another son, Ormonde Kranich, in July, 1955.

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SULPHONATES

based on

tetrapropylene polymer

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* NANSA H.S. FLAKE

80% dodecyl benzene sodium sulphonate

* NANSA S. POWDER

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bead type totally spray dried synthetic detergent containing molecularly condensed phosphates, carboxy-methyl-cellulose, silicates, foam builders etc.



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INORGANIC DIVISION: phosphoric acid and complex phosphates.

Emery Fetes Armitage

Harry D. Armitage, New York sales representative of Emery Industries, Inc., Cincinnati, was presented with his 30 year pin during the recent Exposition of Chemical Industries in Philadelphia, by A. W. Schubert, executive vice-president of Emery. After the presentation, Mr. Armitage was the guest at a testimonial dinner held in his honor. Twenty members of the sales staff were in attendance at the dinner. Mr. Armitage, a native of Ohio, joined Emery in 1925 as a salesman. In 1930, he established the New York sales office.

CIBS Name Chairmen

The Cosmetic Industry Buyers and Suppliers Association announced the appointment of seven committee chairmen for 1956 at a meeting held Ian. 12 at Toots Shor's Restaurant, New York, Guest speaker at the meeting was Steve L. Mayham, executive vice-president of the Toilet Goods Association, who discussed the problems that the cosmetic industry will face in 1956. Named as committee chairmen were: Frank X. Hussey, Jr., Evans Research and Development Corp., constitution committee; William Rubin, Topics Publishing Co., publicity committee; Samuel Zuckerman, H. Kohnstamm & Co., scientific committee; Allen T. Stewart, Parfait Promotional Packaging Co..



A. W. Schubert, executive vice-president of Emery Industries, Inc., Cincinnati, pins 30 year service pin on Harry D. Armitage, New York sales representative for Emery. K. K. Boyd, Emery executive, looks on.

membership committee; Albert E. Mosheim, Jr., House of Tre-Jur, Inc., program committee; Harry A. Cowperthwaite, T. C. Wheaton Co., auditing committee; and Paul W. Alexander, *Drug and Cosmetic Industry*, historian.

Fels-Naptha Names Walsh

Owen Walsh was recently advanced to assistant general sales manager of Fels-Naptha Soap Co., Philadelphia. He will continue as manager of the firm's Mid-Atlantic Division in addition to his new duties.

New Imperial Plant

A new Canadian plant to make detergent alkylate will be built soon by Imperial Oil, Ltd., Toronto, at Sarnia, Ontario, it was announced recently by J. R. White, president. The new plant will cost \$3,800,000 and is expected to be in operation some time in 1957. It will have a capacity of 30,000,000 pounds yearly of detergent alkylate and smaller quantities of other alkyl aromatic compounds.

NPA Elects Poland

Carter D. Poland, president of Poland Soap Works, Anniston, Ala., recently was elected to charter membership in the newly formed National Council of the National Planning Association, a research and planning organization which is headquartered in Washington, D.C. Membership in the National Council is restricted to 1,000 members and Mr. Poland joins such distinguished personages as Thomas K. Finletter, Elmo Roper and Marriner S. Eccles as members of the council. A former director of the Association of American Soap and Glycerine Producers, Inc., Mr. Poland also served for four years on the association's National Cleanliness Promotion Committee.

Newly installed officers of the Cosmetic Industry Buyers & Suppliers Assn. (CIBS) gather at recent meeting. L. to r.: Jack Jordan, Crown Cork & Seal Co., recording secretary; Harold Anderson, H. Kohnstamm & Co., director; J. William Voit, Geo. Lueders & Co., corresponding secretary; James Beyer, Lehn & Fink Products Corp., treasurer; David J. Warner, Fleuroma, Inc., president; George Kempkes, Pacquin, Inc., first vice-president; Edgar Ellis, Charabot & Co., director; and William Jaeger, Park & Tilford, second vice-president.



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Give your powdered household detergents the odorappeal that builds sales, wins consumer loyalty... with Tergescents, the fragrances specially developed for that purpose!

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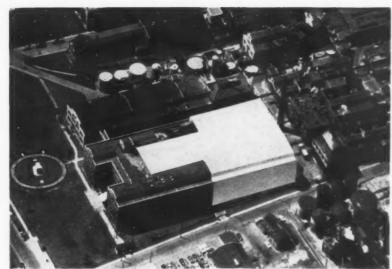
We shall be glad to recommend the specific type of Tergescent ideally suited to your household detergent.



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Procter & Gamble's Manufacturing Administration and Research Building in Cincinnati will be more than doubled in size in an expansion program now underway. The 175,000 square foot addition to the present building, costing in excess of \$1,750,000, is indicated by the white portion of the above aerial photograph.

Purex Advances Lahey

Purex Corp., Los Angeles, recently appointed Leo J. Lahey, Jr., as east central divisional sales manager with headquarters in Cleveland. Mr. Lahey has been with Purex since 1946 when he joined the firm in St. Louis and later became a member of the sales department.

Florasynth Sales Meeting

A meeting of the sales staff covering eastern territories was held recently by Florasynth Laboratories, Inc., New York. Hosts for the meeting were William Lakritz, president; Joseph H. Fein, treasurer; Jack Friedman, vice-president; David Lakritz, vice-president and chief chemist, and Arch Payne, representing sales supervisory control. Representing Florasynth sales in South America and other Latin American territories was Armando Carranza.

The meeting featured a full program of discussion covering production and sales, accomplishments in 1955 and objectives for 1956. David Lakritz spoke on new materials and their future applications, and Joseph H. Fein discussed the developments of the midwestern and western divisions of the company. Mr. Fein also reported on the company's proposed advertising

plans and program, which he said would be stepped-up and intensified in the coming year.

William Lakritz gave a yearend report on the company's activities in 1955 and discussed projects approved by the executive committee to be activated in 1956.

Buys Dermocare Soap Corp.

National Healthaids, Inc., Mount Vernon, N.Y., has purchased Dermocare Soap Formula Corp., Long Island City, N.Y., it was announced recently by Hal A. Salzman, president of National Healthaids. Dermocare makes a specialty soap under that name for use on dry skin. The product has been marketed since 1942.

Economics Buys Cleaner

Economics Laboratory, Inc., St. Paul, Minn. manufacturer of cleaning compounds, has purchased "Soil-Off," a liquid paint cleaner, from the S.O.S. Co., Chicago, it was announced recently by M. J. Osborn, board chairman of Economics, which plans to market the product on a national basis. Heretofore, "Soil-Off" had been distributed mainly in western markets from Chicago to the west coast. The production of the paint cleaner is expected to be handled in Economics Laboratory plants in Lyndhurst, N. J.; Chicago; Dallas; St. Paul: and Santa Clara, Calif.

Detroit Lever Relocates

Lever Brothers Co. recently moved its Detroit district offices from the Book Building to a new location at 3115 Cadillac Tower, Detroit. T. B. Stedman is manager of the firm's offices which have jurisdiction over Lever sales and distribution in Michigan and Indiana.

Photo taken during recent eastern sales meeting of Florasynth Laboratories, Inc., New York, shows: left to right, seated: William Lakritz, president; Joseph H. Fein, treasurer; Jack Friedman, vice-president; Armando Carranza, Latin American sales representative; Jack Marder; David E. Lakritz, vice-president and chief chemist, and Jack Senior. Standing, l. to r.: Arch Payne, Murray Simon, Morris M. Winer, Ray Ross and Arthur Liccionne.



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This versatile trio represents the most economical source of the amine group because of their low equivalent weights and moderate prices. Marketed by CSC in both anhydrous and aqueous forms, they are available for shipment in large-volume quantities (tank cars) as well as in drums and smaller containers. Write for latest Technical Data Sheet. Industrial Chemicals Sales Dept., Commercial Solvents Corporation, 260 Madison Avenue, New York 16, N. Y.

MONOMETHYLAMINE CH3 NH2

Manufacture of amide and sulfonated amide-type detergents and surfactants. Synthesis of caffeine, aminophylline and desoxyephedrine. Manufacture of photographic chemicals, the explosive tetryl, amide-type plasticizers, ion-exchange resins, corrosion inhibitors and paint removers.

Properties

Molecular Weight 31.06 Beiling Point at 760mm, °C -6.79Flash Point, Tag Open Cup, °F 34 (30% sol) Density at 20°C 0.912 (30% sol) Weight per U.S. Gallon at 68°F, lbs. 7.6 (30% sol)

DIMETHYLAMINE (CH₃)₂ NH

Raw material in manufacture of thiuram sulfide-type vulcanization accelerators and of dimethyldithiocarbamic acid salts used as fungicides. Neutralizing and solubilizing agent in preparation of concentrated solutions of 2,4-D salts. Manufacture of anti-malarials.

Properties

Molecular Weight 45.08 Boiling Point at 760mm, °C 6.88 (25% sol) Flash Point, Tag Open Cup, °F 0.921 (25% sol) 7.7 (25% sol) Density at 20°C Weight per U.S. Gallon at 68°F, lbs.

TRIMETHYLAMINE (CH₃)₃ N

Preparation of long-chain quaternary ammonium compounds used as softeners. lubricants and waterproofing agents for textiles. Used with benzoyl peroxide to "set" methacrylate resins. Synthesis of cationic surface-active agents.

Properties

Molecular Weight Boiling Point at 760mm, °C 2.87 (25% sol) Flash Point, Tag Open Cup, °F Density at 20°C 0.913 (25% sol) Weight per U.S. Gallon at 68°F, lbs. 7.6 (25% sol)

OMMERCIAL SOLVENTS



SOAP and CHEMICAL SPECIALTIES

Pact Joins Quaker

Harry H. Pact has been appointed to the sales staff of Quaker Chemical Products Corp., Consho-



Harry H. Pact

hocken, Pa., according to a recent announcement by Robert R. Ackley, vice-president in charge of sales. Mr. Pact will make his headquarters in Cranston, R. I. Mr. Pact received his formal education in Vienna, Austria. He has been associated with Burlington Mills Corp. as a chemist and dyer and with L. Sonneborn Sons, Inc. Since 1946, he has been connected with chemical sales, first as divisional manager for E. F. Drew & Co., Inc., and then as technical representative for Glyco Products Co., Inc., with whom he was connected during the past five-years before joining Quaker.

Fragrance Symposium

Methods for premarket testing of fragrances will be discussed at an open symposium of the American Society of Perfumers to be held at Essex House, New York, on the afternoon of March 21. Experts in market research and representatives of leading toiletries and perfume houses will discuss available methods for determining consumer acceptance in the fragrance field. Studies on the psychological influence of perfumes will also be presented. Interested members of the industry are invited to participate. The committee includes Pierre Bouillette, Andrew Farago, Oliver

Marton, Ernest Shiftan, Christian Wight, and Everett Kilmer, chairman. A cocktail hour and dinner will follow the meeting. Further information available from E. D. Kilmer, Lever Brothers Co., Edgewater, N. J.

Brooks to Chicago

Leonard S. Brooks, general manager of P. R. Dreyer, Inc., perfuming materials house, is now making his headquarters in Chicago. He recently moved to Chicago from the West Coast where he held a similar position. Mr. Brooks has been associated with the perfuming and flavoring materials business for the past 23 years since his graduation from Columbia University in organic chemistry.

Two Join Roubechez

Ozro Fish, Jr., recently joined Roubechez, Inc., New York, as a sales representative in New England, New York state and New Jersey. Previously for 20 years he had been with George Lueders & Co., New York. Mr. Fish was also with the Aromatics Division of General Drug Co., Newark, N. J.

At the same time Roubechez announced the appointment of Anthony Balchius as control chemist and perfumer in charge of production for the firm. He is a member of the American Society of Perfumers and was formerly associated with Dodge & Olcott, Inc., New York.

Anthony Balchius



Chemical Salesmen Elect

E. L. Collins, iodine sales manager for the Chilean Nitrate Sales Corp., New York, was in-



E. L. Collins

stalled as president of the Salesmen's Association of the American Chemical Industry at the Biltmore Hotel, New York, on Jan. 18. Others who took office include Vincent L. Rebak, Grace Chemical Co., vice-president; Robert J. Roberts, Emery Industries, Inc., treasurer; James E. Spencer, Harshaw Chemical Co., secretary. New directors include Joseph R. Augello, Washine National Sands, Inc.; Charles E. Griffith, R. W. Greeff & Co.; Lester E. Johnson, International Nickel Co.; W. Gilbert Kayser, Jr., Sharples Chemicals, Inc.; Herman M. Schulman, Washine National Sands,

P&G Names Smythe

Procter & Gamble Distributing Co., Cincinnati, recently named F. J. Smythe as central sales division manager and R. M. Burgess as Louisville, Ky., district manager, succeeding Mr. Smythe.

MM&R Expands Exports

Magnus, Mabee & Reynard, Inc., New York, has just announced the expansion of the export and import departments of their International Division to include more than eighty industries in over 50 countries. At the same time, George H. McGlynn was named vice-pres. in charge of the international division.



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Ruston of Emery Retires

N. A. Ruston, director of development and service for Emery Industries, Inc., Cincinnati, retired





N. A. Ruston

W. T. Meinert

February 1. In accepting Mr. Ruston's retirement, A. W. Schubert, executive vice-president, stated that he would continue with the company in a consulting capacity. Mr. Schubert also announced that W. T. Meinert, formerly assistant director of the department, succeeds Mr. Ruston as director.

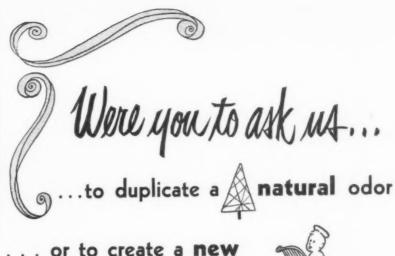
Mr. Ruston joined Emery in 1930 as a salesman, became general sales manager and subsequently moved up to the position he is now leaving. For the past 14 years, he has been a director of the company. His successor, Mr. Meinert, joined Emery seven years ago after wide field experience, particularly in textile processing. He is a graduate in chemistry of St. Ambrose College, Davenport, Ia., and holds an M.S. degree from the Institute of Textile Technology, Charlottesville, Va.

Dow Phila. Office Moves

Dow Chemical Co. will relocate its Philadelphia offices at 400 Market St., Camden, N. J., it was announced recently by J. G. Widua, manager of the Philadelphia sales office.

ADACIOM Hears Mayor

Raymond R. Tucker, mayor of St. Louis, was guest speaker at the Feb. 8 luncheon of the Associated Drug and Chemical Industries of Missouri, Inc., held at the Chase Hotel, St. Louis. Mayor Tucker addressed the group on "The Relationship of the Charter to St. Louis Business."



. or to create a new fragrance



... or conversely, to an odor



We would gladly welcome



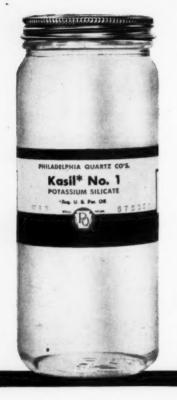
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SOAP and CHEMICAL SPECIALTIES

Milo to Rhodia, Inc.

Frank J. Milo has been appointed sales representative by Rhodia, Inc., New York, specializ-



Frank J. Milo

ing in aromatics and Alamask industrial odor control chemicals. Mr. Milo was formerly associated with Givaudan-Delawanna, Inc. and Sindar Corp., New York. Since September, 1953, until joining Rhodia recently, he was associated with Corona Mills, Lawrence, Mass.

Wight Heads Perfumers

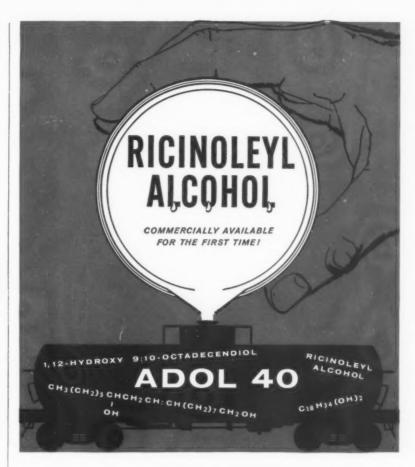
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Christian F. Wight of van Ameringen-Haebler, Inc., New York, was elected president of the American Society of Perfumers at the annual meeting held January 18th at the Advertising Club, New York. Other officers chosen included Ernest Shiftan of van Ameringen-Haebler, Inc., chairman of the board; vice-president, Pierre Bouillette, Givaudan - Delawanna, Inc.; secretary, Dr. Oliver L. Marton, Shulton, Inc.; treasurer, Edwin D. Morgan, Lever Brothers Co. Kenneth H. Walker of Manhattan Soap Co. was elected a director for three years.

The following officers were reelected: Theodore Bumiller, Jr., Givaudan-Delawanna, Inc.; Paul H. Lelong, Firmenich, Inc.; Maurice A. Meunier, Les Parfums de Dana, Inc. Everett D. Kilmer reported on plans for the second annual "Open Symposium" to be held at the Essex House, New York, on March 21st at 2:00 P.M.





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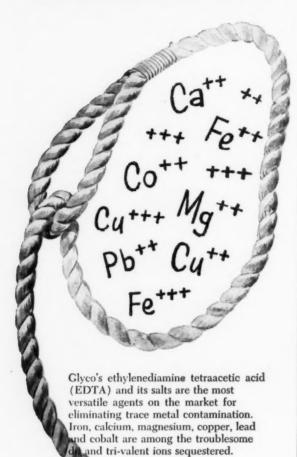
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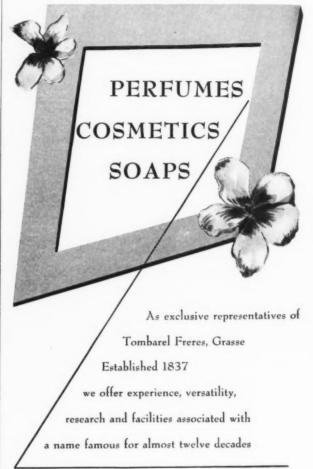
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SOAP and CHEMICAL SPECIALTIES

Levens Sales Manager

Chris F. Bingham, vice president in charge of sales for Columbia-Southern Chemical Corp., Pittsburgh, has announced the appointment of Martin G. Levens as Philadelphia district sales manager for the company. Mr. Levens succeeds Paul A. Fodor, Jr., recently appointed assistant director of sales for the company. He is a graduate of Gettysburg College and joined Columbia-Southern in 1947. He was formerly assistant sales manager for Philadelphia.



Paul Byrne

Colgate Names Two

Colgate-Palmolive Co., Jersey City, N.J., recently announced two new appointments. Paul Byrne has been named assistant merchandising manager and Arthur T. Castillo was appointed assistant new products manager. Mr. Byrne formerly was assistant to the president of Prince Matchabelli, Inc., New York.

Arthur Castillo



FEBRUARY, 1956



This firm is making chemical history!

How does a company grow from one plant to one of the largest multi-plant producers of phosphorus chemicals?

A far more challenging question is: how does a company do it in four years?

At Shea Chemical Corporation (which achieved this record) the answer lies in our conviction that "There's always room for improvement."

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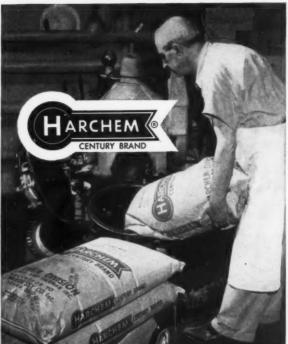
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New Solvay H.O. Plant

Solvay Process Division, Allied Chemical & Dye Corp., New York, recently announced that its new hydrogen peroxide plant installation at Syracuse, N. Y., has gone into operation. The plant, under construction for the past eighteen months, is utilizing a new type of chemical oxidation reaction in contrast to the older electrolytic method of producing hydrogen peroxide, the announcement stated. The product will be produced in both 35% and 50% grades and will be shipped in aluminum drums and tank cars.

Toilet Good Sales Up

S. L. Mayham, executive vice-president of the Toilet Goods Association, told a meeting of CIBS, Cosmetic Industry Buyers and Suppliers Association, held at Toots Shor's Restaurant on January 12, that 1955 was the biggest year in the industry's history. Although sales figures were incomplete, the first three-quarters of the year were 6 per cent ahead of 1954 and the final quarter was one of the largest ever experienced. Christmas demand was far beyond the hopes of most manufacturers. He pointed out that he could see no reasons why the momentum of 1955 should not carry through at least the first half of

The trend toward grocery store and supermarket distribution



New hydrogen peroxide plant of Solvay Process Division, Allied Chemical & Dye Corp. at Syracuse, N. Y. Plant will turn out 35% and 50% grades.

of cosmetics, he stated, has "slowed to a walk" and that drug and department stores were doing most of the business. Old line cosmetic houses, unable to spend as much money on promotion of individual items may lose some volume in standard products to "specialty houses" some of whom spend up to 40% of sales volume in advertising and promoting single items. But, he said, there were doubts that this high promotion cost could be continued successfully profitwise over a period of years.

Diamond Ups McKenna

J. C. McKenna was advanced recently to the newly-created position of manager of soda products sales of Diamond Alkali Co., Cleveland. He previously had been manager of alkali sales. Soap Assn. Meets

(From Page 44)

Problems of the Sanitation Administrator and the Manufacturer of Cleaning Materials", Mr. Burner listed five ways to realize the objectives of sanitation. They are: 1.) Establish material and equipment standards of some sort; 2.) standardize methods; 3.) train workers in the use of standard materials, equipment and methods; 4.) allocate work on the basis of some type of time standard and 5.) inspect the quantity and quality of work performed.

Mr. Barron pointed out that although those phases of maintenance dealing with production and operating devices in the plant have received their share of attention, environmental sanitation and maintenance has been neglected as an organized activity. Recently, environmental sanitation has been receiving more attention because of rising labor costs and competitive pressure from other plants hiring workers on the basis of improved working conditions. Pressure from consumers and communities in which plants are located has also been a factor. Top management is recognizing the importance of environmental sanitation and larger companies are organizing this function, giving it management and executive support, Mr. Barron stated.

The group approved a resolution to allocate \$2500 of general

David J. Warner (center), of Fleuroma, Inc., New York, president of CIBS, with guest speaker S. L. Mayham (r.) and H. Goulden, executive vice-president and scientific director, respectively, of the Toilet Goods Assn. Mr. Mayham told the CIBS that 1955 had been the biggest year in the industry's history.



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association funds for Mr. Barron and Mr. Burner to edit a booklet on building and equipment maintenance.

The commercial dishwashing group meeting featured a talk by L. H. Carl of Union News Company on problems of dishwashing in commercial restaurants. The restaurant operator today is more concerned with the kind of a job a dishwashing compound will do than with its cost, he said.

President's Review

E. W. Wilson, vice P. Armour & Co., Chicago, and president of the Soap Association. gave his review of the year address during the first general session, the morning of Jan. 26. He pointed out that the trend to detergents continued in 1955, but at a slower rate. Total (liquid and solid) synthetic detergent sales rose 12.3 percent in tonnage and 13.8 percent dollarwise in 1955, as compared with 1954. Total soap sales last year declined 0.7 percent in terms of dollars and 6.4 percent in tonnage. Total sales of soaps and detergents for the industry were up 8.5 percent last year, over 1954, dollarwise, and 4.9 percent on a poundage basis. Total production reached an alltime high of 3,667,279,000 pounds in '55, against 3,506,589,000 pounds in 1954. The industry as a whole grossed an estimated \$861,153,000 in 1955, also a record, as against \$793,369,000 in the previous year.

Mr. Wilson also announced the following companies had joined the Soap Association in 1955: Blockson Chemical Co., Joliet, Ill.; Gillam Soap Works, Fort Worth, Tex.; Hammons Products, Inc., Fort Wayne, Ind.; Powdered Products Co., Columbus, O.; Purex Corp., South Gate, Calif., and Shell Chemical Co., New York.

As an important event of the year Mr. Wilson mentioned the resignation of George A. Wrisley from Allen B. Wrisley Co., Chicago, and his resignation from the board of directors of the Soap Association. Mr. Wrisley had been on the board since 1937 and had served for two consecutive years as president of the association on two different occasions. Mr. Wilson read a resolution passed by the board of directors at its December meeting. The resolution was hand-lettered on parchment paper, placed in a leather covered book and presented to Mr. Wrisley as a memento of his many years with the association, Mr. Wilson said.

The consensus of the next two speakers at the general session was that business will continue to be good in 1956. The use of new electronic data processing machines to produce figures on sales statistics weekly and thus make possible "the automatic revision of your forecasting formulas, the appraisal of results, and the direction of the 'action required' statistics to the operating executives involved", declared S. G. Barton, president of the Market Research Corp. of America. "Their great economic importance...is that they can be set up or programmed in effect to apply full power of operating management and top management of your company on the analysis of each individual account", Mr. Barton stated.

Dexter Merriam Keezer. vice-president and director, department of economics, McGraw-Hill Publishing Co., New York, said he expected "1956 to be a year of quite steadily sustained prosperity. But I also anticipate that it will be one in a considerable series of years when general prosperity is the general rule", he stated.

Glycerine Awards

THE glycerine awards, given annually in nually in recognition of new and independent research contributing to knowledge and use of glycerine, were awarded at the group luncheon Jan. 26. The first award went to Dr. Reed A. Gray, Merck & Co., plant physiologist for his research in incorporating glycerine in streptomycin formulations thus increasing the absorption of the antibiotic by plants and enhancing its

effectiveness against common bacterial blight of beans. The first award consists of a plaque and a \$1,000 cash purse. The second award winner is Dr. Eugene P. Kennedy, University of Chicago biochemistry professor, for his study of biosynthesis of phospholipids, including the role of glycerine derivatives as precursors of these compounds that are found in all living tissues. Dr. Kennedy also received a plaque and a \$500 cash award.

For a process using slaked lime in glycerine water solutions to convert sodium sulfate into caustic soda, Dr. Karl H. Lauer, chemistry professor at the University of Alabama, received the third award. a plaque and \$200.

Employing a 65 percent mixture of glycerine in water, he obtained a 98 percent conversion of sodium sulfate to a concentration of 5.6 percent caustic soda, whereas the best previous result with water was 44 percent conversion to a concentration of 0.98 percent caustic soda.

The "Impact of Nuclear Science on American Industry" was discussed at the Jan. 26 luncheon by Dr. Lauchlin M. Currier, vicepresident, Union Carbide Nuclear

"Economic atomic power is not yet here but is 'just around the corner' and already affects our thinking on 1.) distribution and location of manufacturing facilities, 2.) costs of future production and 3.) sociological effects on redistribution of people and products", Dr. Currie said.

Monsanto Names Sessions

L. W. Sessions has been named Detroit district sales manager of the Inorganic Chemicals Division, Monsanto Chemical Co., St. Louis, it was announced recently by Tom K. Smith, Jr., division director of marketing. Mr. Sessions succeeds H. P. Walmsley, who will handle special assignments for the Inorganic Division sales department at St. Louis.

Chemical Specialties

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Chemical Specialties Manufacturers Association, Inc.

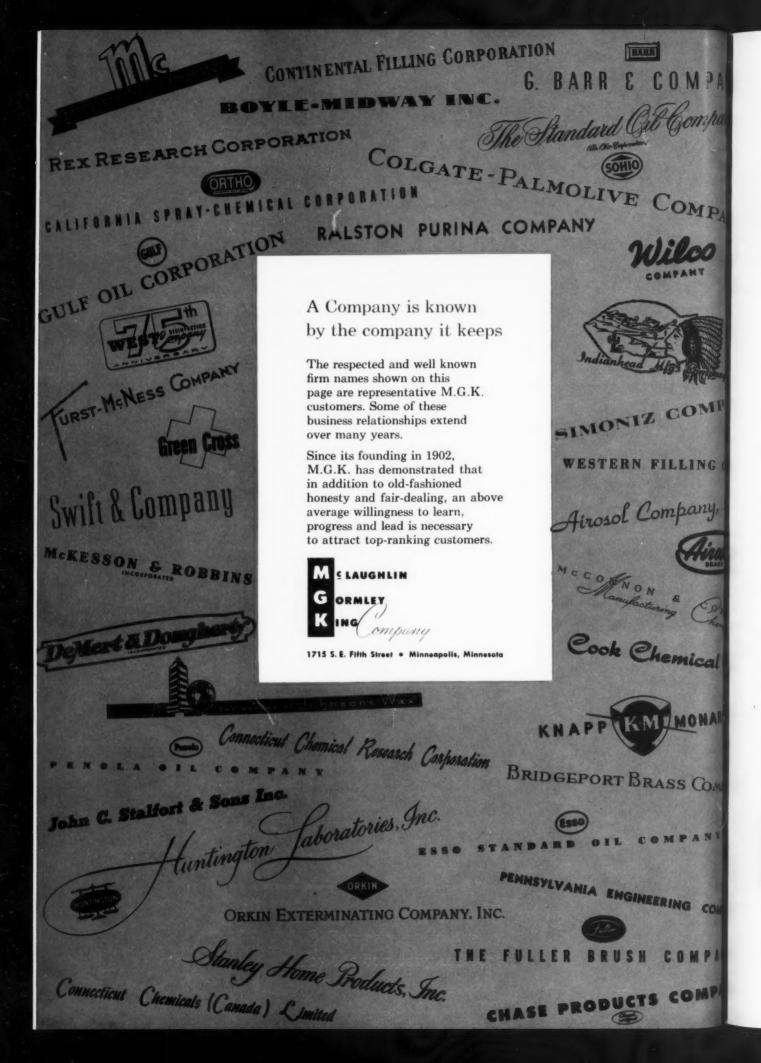
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3. Leather Oils	Emulsifying Agent for Leather Processing Oils	Wetting and Dispersing Agent for Leathers	
	DISPERSION AND WETTING OF SOLIDS		
4. Rubber Manufacture	Thermo Plasticizing Agent	Increases Dispersibility of Filler	
5. Fuel Oil	Keeps Sludge in Suspension	Prevents Segregation of Moisture	
6. Printing Ink Manufacture	Aids dispersion of pigment	Reduces Viscosity of Ink	
7. Ore Flotation	Flotation Reagent	Selective Wetting Agent	
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	WETTING AND DISPERSION OF LIQUID-SOLID SYST	EMS	
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0. Emulsifiable Solvent Cleaners	Dispersing Agent for Oil and Grease Deposits	Acts as Emulsifying Agent	
1. Dry Cleaning Compounds	Linking agent for Water and Solvent	Loosens Dirt Absorbed by Fabric	
12. Fat Splitting Process	Dispersing Agent for Solid Fats	Acts as Wetting Agent	
	INHIBITION OF RUST AND CORROSION		
13. Corrosion Preventive Compounds	Rust and Corrosion Inhibiting Agent	Acts as Moisture Barrier	
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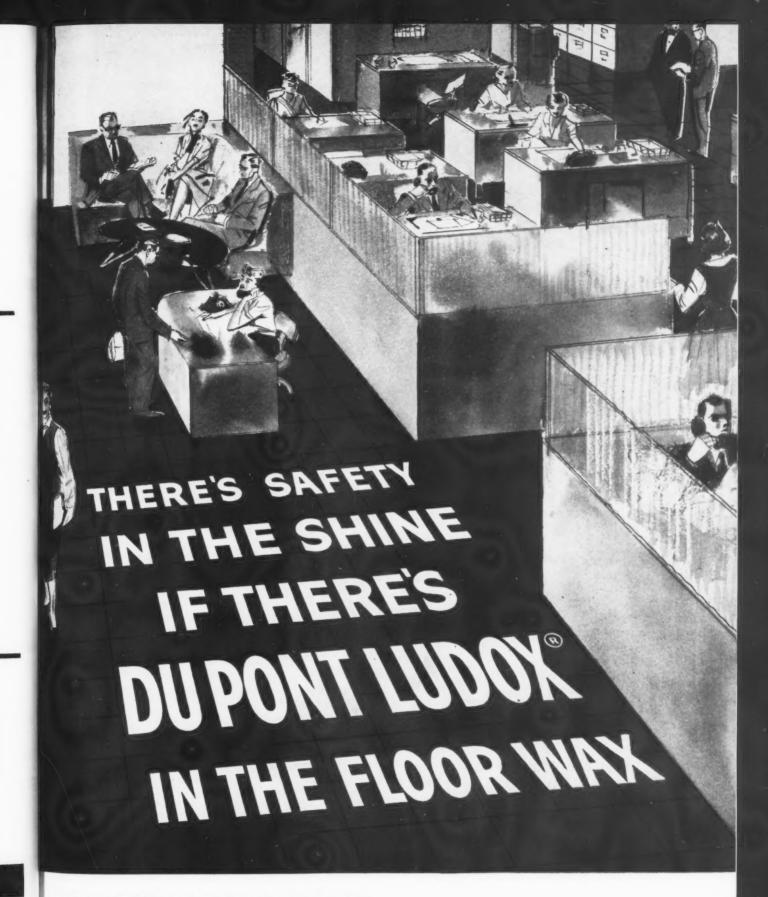
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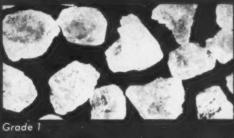
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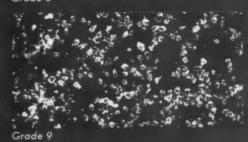
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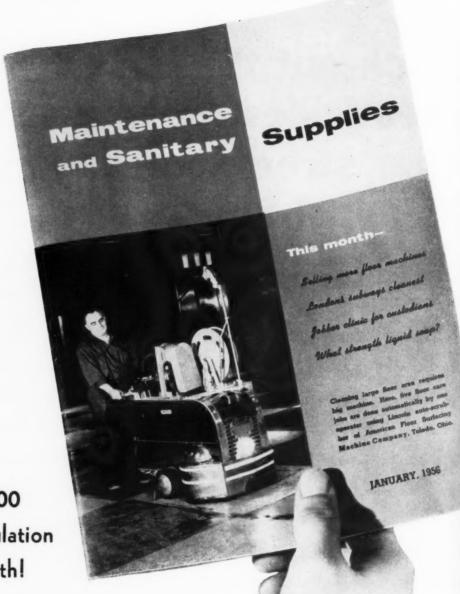
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Effectiveness of

Paradichlorobenzene

in Plastic Garment Bags

N recent years the use of plastic garment bags for storing and protecting woolen clothing has become increasingly popular. Generally, a supply of paradichlorobenzene (PDB) is sold with the bags for use as a fumigant to destroy insect pests that might damage the stored clothing. In Canada, the sale of PDB for this purpose is under government legislation through the Pest Control Products Act. The Act provides for registration of the insecticide (PDB) after acceptance of submitted proof of its effectiveness for the purposes claimed. The claims for PDB usually are that when used according to instructions it will kill all stages of carpet beetles and/or clothes moths.

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The majority of garment bags now available to the public are made of plastic films of two types, usually distinguished by the trade as vinyl and poylethylene. Both materials are permeable to PDB vapors to varying degrees. Furthermore, garment bags have certain structural characteristics such as seams, grommets, and zippers, as well as sales-promoting features such as embossing, quilting, and pigmenting, that might contribute to the loss of PDB vapors. This is a report on an investigation of the effectiveness of PDB as a fumigant in plastic garment bags for the control of insect garment pests carried out at the Ottawa laboratory as an

By Dr. John W. Arnold†

Stored Product Insect Unit, Entomology Division Ottawa, Canada

aid in the administration of the Pest Control Products Act.

Materials and Methods

PRELIMINARY insect mortality tests with PDB in a series of structurally different garment bags showed wide variation in effectiveness and little correlation between effectiveness and the structural variables tested. Although apparently similar, some features of the bags were presumably different and related to loss of vapors. As the sources of vapor loss needed to be determined, studies were conducted on permeability as well as on dosage and mortality. Films were supplied through the courtesy of Canadian Resins and Chemicals Ltd., Montreal, Que., and Stor-Aid of Canada Ltd., Oakville, Ont. The garment

bags used in the tests included some that were submitted for registration by various manufacturers and several that were purchased on the retail market.

Permeability Studies

PERMEABILITY of Plastic Films.-Fifty grams of PDB crystals (Di-Chloricide, Merck & Co., Ltd., Montreal, Que.) was levelled over the bottom of each of a series of 75-x 150-mm, crystallizing dishes. The top of each dish was then covered tautly with the film to be tested, secured at the rim with a broad rubber band. Each dish was weighed immediately and daily thereafter for two weeks to determine the daily loss of PDB by permeation of vapors through the films. The dishes were kept at room conditions but were protected from drafts. Control dishes without covers and with impermeable cellophane covers were included. Each film was tested in duplicate and the

Fig. 1. Containers used in testing of plastic films with some structural features of garment bags as follows: back row, left to right, metal grommet, zipper in cloth tape, two sewn seams, one sewn seam; front row, left to right, plastic grommet, zipper in plastic tape, two heat-sealed seams, one heat-sealed seam.



^{*}Contribution No. 3395, Entomology Division, Science Service, Department of Agriculture, Ottawa, Canada.

FEBRUARY, 1956

[†]Associate Entomologist.

thickness (gauge) of each was measured with a micrometer screw gauge.

Permeability of Structural Features.—The same technique was used to measure vapor loss through various structural features of garment bags. Several bags were cut into appropriate sections, each section containing one of the features to be studied. The sections were applied to dishes and treated as above (Fig. 1). The features studied were sewn and heat-sealed seams, zippers in cloth and in plastic tape, metal and plastic grommets, and quilted plastic. The zippers were cut in the closed position. With sections that contained a grommet, the wire hanger was cut and the section inverted on the dish with the hanger in place. In this way the hole for the hanger was filled to the same extent as in a hanging bag. Control dishes were covered with plain plastic from each bag whose features were being tested.

Dosage-Mortality Studies

APORIZATION Rates and Insect Mortality.—PDB vapor concentrations that developed in various garment bags were estimated from measurements of vaporization rates from a relatively constant source of PDB in the bags, in an open room, and in air-tight containers. For the last situation, three air-tight chambers identical in size and shape to a standard 7.6-cu. ft. garment bag were constructed of galvanized metal. A metal door that fitted against a rubber gasket was secured on 10 bolts by wing-nuts.

Cylindrical containers for the PDB crystals, 2 in. x 12 in., were constructed of 30-mesh wire screening. A cork was fixed at one end, and another could be moved within the cylinder and fixed against the crystals. The length of the cylinder was thereby varied with the amount of crystals. A hook screwed into each cork served to suspend the containers horizontally. A relatively constant surface of PDB was thereby exposed for duplication of results and the normal practice of suspending the crys-

tals in a gauze bag was simulated. The vaporization rate from these containers was somewhat higher than from cotton sacks usually supplied with the garment bags.

The vaporization rate of PDB at room conditions (72° to 78°F.; 35 to 68 percent relative humidity) during various periods was determined for different dosages. A cylinder containing a known weight of crystals was suspended horizontally at the top of each bag in the series and in the metal chambers. These were immediately closed for definite periods. The cylinders were weighed after each exposure to determine the amount lost by vaporization. The bags and metal chambers were thoroughly aerated and the wire cylinders refilled with crystals for each exposure. All of the tests were carried out in a long room, approximately 18 x 9 x 14 ft., with a door at one end. A ventilator operated in the room during the daytime. The garment bags were suspended on racks along three walls, each bag about 10 inches distant from the next. The vaporization rate from the PDB cylinders suspended horizontally in the open room was also determined.

The only test insects used were mature larvae of the black carpet beetle, Attagenus piceus (Oliv.); these were approximately four months old, weighed approximately 10 mgm., and had been reared at room conditions in a medium consisting of successive layers of army cloth and ground dog biscuits. The insects were suspended at three levels in the bags, 20 larvae in each or three 1-x 3-in., 30-mesh wire cylinders. They were removed to open dishes of their normal food after exposure for various periods, and mortality was determined after seven days. The mortality of clothes moth larvae may be interpreted from the data by reference to standard fumigation tests with PDB for both species (1).

Dosages Required for Seasonal Storage.—To determine the minimum dosage required to kill larvae in clothing stored for seasonal periods when PDB is not re-

placed periodically, the following procedure was used. The least and the most effective bags in the series, determined by the previous tests, were loosely filled with clothing suspended on hangers. Two wire test cylinders, each containing 30 larvae and a strip of army cloth, were placed in garment pockets in each bag. A known amount of crystals was suspended at the top and the bag closed for one month, when insect mortality was determined.

Results and Discussion

Permeability Studies

PERMEABILITY of Plastic
Films.—The amounts of PDB
lost daily by permeation of the
vapors through the plastic films
(approx. 177 sq. cm. in area) were

as follows: (a) polyethylene films (plain): 0.0015 gauge, 738 ± 20 mgm; 0.0030, 664 ± 11 mgm.; 0.0040, 642 ± 15 mgm.

(b) polyethylene films (pigmented): 0.0032 gauge, 607 ± 12 mgm.; 0.0040, 593 ± 12 mgm.

(c) vinyl films (plain): 0.0030 gauge, 675 ± 12 mgm.; 0.0043, 673 ± 15 mgm.; 0.0059, 638 ± 17 mgm; 0.0079, 598 ± 19 mgm.

(d) vinyl films (embossed): 0.0040 gauge, 612 ± 15 mgm. Daily loss from the uncovered controls was 1530 ± 226 mgm. No vapor permeated the cellophane films.

"Student's" t test showed significant differences at the five per cent level between the following:

(a) polyethylene films: 0.0015 and 0.0030 gauge; 0.0015 and 0.0040 gauge; 0.0030 gauge, plain, and 0.0032 gauge, pigmented; 0.0040 gauge, pigmented.

(b) vinyl films: 0.0030 and 0.0079 gauge; 0.0043 and 0.0079 gauge; 0.0043 gauge, plain, and 0.0040 gauge, embossed. There was no significant difference between polyethylene and vinyl films of comparable gauge.

These data may be interpreted generally as follows: The plastic films retained up to about 60 per cent of PDB vapors (based

on vapor loss from uncovered controls). Permeability of a film was significantly decreased by doubling its thickness, embossing with a fine pattern, or adding pigment. Although tests for the effect of embossing on permeability were restricted to vinyl films, and for the effect of pigmenting to polyethylene films, it is assumed that the results apply to either material.

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Presumably these interpretations are true for films produced by any single manufacturer, at least in regard to the effect of gauge, embossing, and pigmenting on permeability. However, they may not be assumed when considering films from several manufacturers.

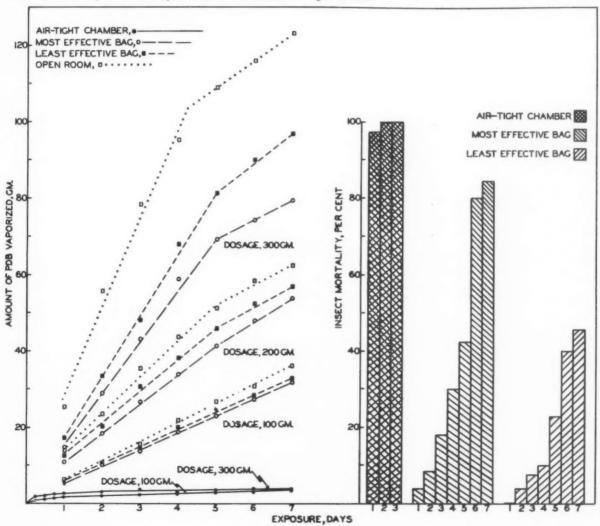
Tests with a similar series obtained by cutting sections from garment bags produced by different companies showed no constant correlation between permeability and gauge or type of film. This is briefly illustrated by the data for the controls in the following section on permeability of structural features; 0.0026-gauge vinyl film from one bag was less permeable than 0.0044-gauge vinyl from another. Apparently many types of films are produced for different purposes and their permeability to PDB vapors varies with the manufacturing process. The films used in the recorded series were of a "general purpose" type, not specifically designed for garment bag construction but frequently used for that purpose. They were less permeable than some films of similar gauge cut from certain garment bags.

Permeability of Structural Features. — The amounts of PDB lost daily by permeation of the vapors through films with certain structural features of two typical garment bags were as follows:

0.0026 gauge, plain vinyl: control (without structural features), 722 ± 31 mgm.; film with one sewn seam, 735 ± 12 mgm.; with two sewn seams (from below zipper), 713 ± 11 mgm.; with zipper in cloth tape sewn with two seams, 779 ± 11 mgm.; with one

Fig. 2 (left) Amounts of PDB vaporized from two different dosages in the air-tight chambers, and from three dosages in two garment bags and in the open room at intervals dur-

ing one week. (Right) Insect mortalities at the same intervals in the three containers where the dosage was $300\,\mathrm{gm}$. of PDB.



metal grommet, 778 ± 11 mgm.

0.0044 gauge, plain vinyl: control (without structural features), 766 ± 11 mgm.; film with one heat-sealed seam, 769 ± 11 mgm.; with two heat-sealed seams (from below zipper), 756 ± 12 mgm.; with zipper in plastic tape secured with two heat-sealed seams, 755 ± 12 mgm.; with one plastic grommet, 785 ± 13 mgm.; quilted plastic (constructed of an inner layer of 0.002 gauge plain polyethylene, a middle layer of cotton waste, and outer layer of 0.003 gauge embossed vinyl, sewn together at one-inch intervals), 647 ± 28 mgm.

"Student's" t test showed no significant difference in vapor loss between the controls and the films with one or two sewn on heat-sealed seams. There was a significant increase in loss through the film with the zipper in cloth tape, but not with the zipper in plastic tape; the tape and not the zipper was therefore responsible for the loss. Leakage was significantly greater in films with a grommet, either metal or plastic, but the loss was relatively greater for those with the metal grommet. Vapor loss was significantly lower through the quilted plastic.

Although the grommets and the cloth tape of zippers contribute to the loss of vapors, they are probably of minor importance practically. Vapor loss through the entire plastic surface of the bag, having an area of approximately 25 sq. ft., is undoubtedly of much greater consequence.

The results of these permeability tests cannot be used directly to calculate the total vapor loss from a garment bag because the technique undoubtedly exaggerates normal conditions. They are entirely relative and serve to show the sources of leakage and the major factors in variation in effectiveness of garment bags as fumigation chambers. The technique, modified and used under controlled, standardized conditions, might be adapted to the rapid determination of the effectiveness of various garment

bags. No attempt was made to determine the effects of temperature and humidity on permeability of the plastic films, although both factors may be important quantitatively.

Dosage-Mortality Studies

Vaporization Rates and Insect Mortality.-The amounts of PDB vaporized from two dosages in the air-tight chambers, and from three dosages in two garment bags and in the open room, at intervals during one week, and the insect mortality at the highest dosage are shown in Fig. 2. The two garment bags for which the data are given were the least and the most effective of the series of 15 bags tested. The least effective bag was constructed of 0.002 gauge, plain, polyethylene film and had two metal grommets and a 35-in. zipper in cloth tape. The most effective was made of 0.008-gauge embossed and pigmented vinyl film with three plastic grommets and a 50-in. zipper in cloth tape.

In the air-tight chambers, vapor saturation (equilibrium) was reached with the vaporization of approximately 3.5 gm. of PDB. This amount is somewhat greater than that theoretically required (2), but the excess may be accounted for by adsorption of vapors on the walls. Equilibrium was reached in about six days at a dosage of 100 gm. and in two days at 300 gm.; 100 per cent mortality of the larvae occurred within the two days at the higher dosage.

In the garment bags, vapor saturation did not develop during one week at any of the three dosages, although up to 97 gm. of PDB vaporized in that period. The levelling of the vaporization curves after five days resulted from the critical decrease in surface area of PDB at that point and not from the effect of increased vapor concentration. The same effect is seen in the vaporization curves for the open room, where no appreciable vapor concentration developed. The maximum vapor concentration for each bag was reached within 24

hr. at each dosage and was maintained until the surface of the PDB dropped below the critical area. Presumably the critical area was proportional to the initial surface area of PDB and was reached when the area decreased to the point where the rate of vapor loss from the bag exceeded the rate of vaporization from the source, i.e., the vapor concentration in the bag began to fall.

The difference between an effective and an ineffective bag was relatively slight in terms of the vaporization rates, but considerable in terms of insect mortality. The rate was lower in the more effective bag, indicating the development of higher vapor concentrations. The difference in rates between the two bags increased with dosage.

Approximations of the vapor concentrations in the bags at various periods may be obtained by relating the vaporization rates in the air-tight chambers, the open room, and the garment bags as follows:

In the air-tight chambers, if a constant exposed surface of PDB and equal distribution of the vapors are assumed, the vapor concentration at a given time is a measure of the amount of vapor emanating from the source minus the amount returning to it.

Thus, dC/dt = K - kC, where C is the vapor concentration, K is the vaporization rate, and k is a specific rate constant.

Also, K=kCe, where Ce is the vapor concentration at equilibrium.

In a plastic garment bag, where leakage occurs, the vapor concentration is related to the difference between the vaporization rate in the bag and in the open room.

Thus, dC/dt - K-kCy - Y, where Y is the vaporization rate in the bag, K is the vaporization rate in the room, and Cy is the vapor concentration in the bag.

These equations may be solved from the data. Since vapor concentrations in the bags apparently remain relatively constant for

(Turn to Page 167)

ACL-85*, New active ingredient for

Bleaching and Sanitizing Agents

By R. G. Ditzel, P. G. Arvan and W. F. Symes**†
Inorganic Chemicals Division, Monsanto Chemical Co.

HE use of sodium hypochlorite as a bleaching and sanitizing agent in homes, commercial laundries, food plants and dairies in the United States is widespread and well established. A mass of data on the use of this material has been reported in previous literature, and the variations in effectiveness with changing conditions are well known. Sodium hypochlorite solutions provide an effective bleach and sanitizing agent at a relatively low cost. They have become the "standard" by which the performance of competitive products is judged.

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Sodium hypochlorite, however, suffers from the disadvantages of being a corrosive liquid that usually must be packaged in bulky glass bottles or carboys. And in this age of convenience a product of equal effectiveness but in a more convenient form may well find a place.

Any change in bleaching or sanitizing agents to provide more convenience, or savings in freight or space at the use site would probably be welcomed by certain portions of the consumers and producers of sodium hypochlorite. Any new product, to gain wide acceptance, would have to show equal or

relatively equal performance when compared with sodium hypochlorite,

Thus, one of the first requirements of any new bleach or sanitizing active, liquid or solid, must be performance essentially equivalent to sodium hypochlorite for the use involved. Rapid and sufficient solubility to produce a working solution is required as a corollary, for without this property the full bleaching capacity is not available.

Secondly, to show an advantage in convenience over the liquid, the new product must be in a solid physical form. The solid form means increased convenience to the consumer in the way of easier handling, lessened chances of damage to humans or fabrics by accidental breakage or spillage, and less sensitivity to freezing temperatures.

For assurance that the product produced from any solid active material will be capable of adequate performance after six to 12 months storage, the active must be relatively stable in the formulation. A small, anticipated drop in active chlorine can be accounted for during initial formulation, but the loss must not be excessive.

Of course, stability and reactivity to provide adequate performance are usually at odds. A very reactive product is usually very unstable in a formulation or per se, therefore a compromise must be arrived at, and the product providing equal performance with sodium hypochlorite combined with satisfactory stability will probably be preferred over one less reactive but more stable.

In addition to the above prime requisites, there are certain advantages of a new product, which in certain applications, may prove to be quite important. One of these, in the textile bleaching field in the home or commercial laundry, is the effect of the product on the tensile strength of cotton and other fabrics. This is one of the disadvantages of the solid bleaching powder, calcium hypochlorite. If a powder is accidentally spilled on a damp cloth, it should show a minimum of degradation of the fiber, even if left standing. This also ties in with the rate of solution of a product for small, slowly dissolving lumps enmeshed in the weave or trapped in a pocket can cause excessively high concentrations of chlorine at one point on the cloth over a prolonged period of time, and possibly result in "pinholing.'

Last, but by no means least, the new product must be priced to permit the formulator to sell his product in competition with sodium hypochlorite, with allowance made for the advantages or benefits received by the ultimate consumer. Just what extra amount the consumer will be willing to pay will depend on the "extra" he receives.

The more important pre-

^{*}ACL-85—Reg. U. S. Pat. Off.
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^{*}Paper presented at the 42nd annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 6, 1955.

requisites for a new product are:
1.) satisfactory performance, 2.) solubility, 3.) stability, 4.) safety,
5.) competitive price.

Several new products have been introduced to the market in the last few years to compete with sodium hypochlorite as a bleaching agent and sanitizer.(1) These include a variety of chemical types, but we shall be concerned only with the more effective of the organic chlorine carriers and the perborates. The perborates, as introduced to the household market, have the special advantage of being safe to wool and silk, which is one disadvantage of the chlorine types, but they are inferior in performance at temperatures encountered in standard practice in the United States. Calcium hypochlorite has also been introduced to the housewife, but suffers the disadvantage of slow or low solubility as discussed above. Products based on dichlorodimethylhydantoin have been introduced both for household and industrial use as bleaching and sanitizing agents, but under equivalent conditions do not offer the performance of sodium hypochlorite.

Monsanto Chemical Company, realizing a need existed for which a product was not available, undertook an evaluation of several prospective bleaching and sanitizing actives several years ago, and with the requirements for a new product which are outlined above, developed information on use and process for a promising new active ingredient for bleaching and sanitizing agents.

This new product developed by Monsanto is ACL-85, an organic chlorine bearer which shows excellent performance. Chemically, ACL- 85 is trichloroisocyanuric acid, and as such, is a symmetrical molecule with all three chlorines showing approximately equal reactivity, as can be suspected from the configuration of the molecule. This is not true of certain other organic chlorine carriers, in which the various chlorine atoms are bonded to dissimilar nitrogens, and show different reactivities. The more important physical and chemical characteristics of ACL-85 are shown in Table I.

ACL-85 is a white crystalline solid, with an available chlorine content of about 90 percent as produced, which is very close to the theoretical value of 91.54 percent. It is an acidic compound and shows a pH of slightly less than 3 in a fresh one percent aqueous solution. It is relatively non-hygroscopic. The particle size, which is rather fine, aids in rapid dissolution and provides a means for evenly distributing the available chlorine throughout a formulated product.

ACL-85 can be mixed by a formulator serving the household, laundry, dairy or food plant markets, into a product of the desired available chlorine content and containing builders, fillers, surface active agents and corrosion inhibitors as required. Final products containing ACL-85 will vary from one formulator to another, depending on the particular use and economic situation, and based on the principles outlined hereafter.

It should be pointed out that ACL-85 may be used on cotton and

Table I. Physical and Chemical Characteristics of ACL-85

Chemical designation:

Trichloroisocyanuric acid

Chemical structure:

Physical form:

Crystalline solid

Color:

Cream to white

Available chlorine content:

Theoretical: 91.54%
Actual: 89-91%
pH, 1% solution 2.7-3.0
Hygroscopicity:

80°F, 80% RH, 60 hrs: 1% Bulk density: 58-62 lb/ cu ft

Screen analysis:
plus 20 mesh: 4%
plus 200 mesh: 60%

many synthetic fabrics, but definitely should not be used on wool or silk, as is the case with all reactive hypochlorite type products, as yellowing and excessive degradation may result.

The bleaching action of ACL-85 has been investigated as it is affected by:

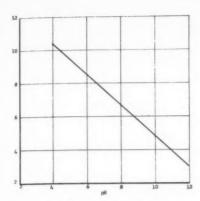
- 1.) pH of the bleaching solution
- 2.) Temperature of the bleaching bath
- 3.) The concentration of available chlorine in the bleaching solution
- 4.) Time in contact with the fabric

Work reported on these variables was carried out on cotton cloth using standard light reflectance techniques to measure the degree of bleaching. The purpose of the investigation reported here was to determine the general effects of the variables outlined above, and data have been obtained under laboratory conditions indicating the effects which may be expected under a wide variety of use situations.

The pH of the bleaching solution has a direct effect on the speed with which ACL-85, or any other hypochlorite-type bleach, does its bleaching job. Bleaching is faster at lower pH's, slower at higher ones. Often dry bleaches, especially in the home market, will be added to the wash water and the builders of the detergent being used will essentially fix the pH, with the bleach formulation having only a small effect. For this reason, significant bleaching must be produced at a pH of 9.5-10, regardless of the pH of the bleach formulation.

The variation of ACL-85 bleaching with pH is shown in Figure I. In this experiment, 6" x 6" swatches of previously washed unbleached muslin were bleached for 15 minutes at 120°F in one liter of water containing five percent of a buffer salt and 50 ppm available chlorine from ACL-85. The buffer salts used were TSP, DSP, MSP, STP and sodium metaphosphate glass. After bleaching, the cloths were rinsed and

⁽¹⁾ As an indication of the market in one area of the bleaching field, the Food Field Reporter of September 5, 1955, shows the total dollar sales of bleaches, whether to households, farms, institutions, restaurants or to the government in 1953 to be \$60,290,000. In 1954, this rose to over \$65,000,000 of which \$7,390,000 was for solid forms. The increase in solid bleach sales from 1952 to 1953, (about when the solids were established on the market) is shown as +12.3%, compared to liquids at a 1.7% gain. But in 1954 the liquids bounced back, gaining 9.3% over 1953, compared to only a 1% increase for solids. Just what caused this reversed decision by the consumer is not clearly defined, but it may have been dissatisfaction with inadequate performance of the solids. Further breakdowns into specific types of solid bleaches are not given.



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Figure I. Variation of ACL-85 bleaching with pH. Unbleached muslin; 50 ppm available chlorine; 15 mins. at 120° F. Percent whiteness increase shown on left vertical line of graph.

ironed in a standard manner, on a flatbed press and the reflectance measured. The constant slope of the curve shows that at no pH is an inactive species produced, and that even at a high pH, significant bleaching is attained. While it may seem that good bleaching action is too highly dependent on pH, results reported below show that ACL-85 does as good a bleaching job at pH 9-10 as does sodium hypochlorite.

The effect of temperature on the efficiency of the bleaching of ACL-85 was studied over the range of 80-180°F. in a Launder-Ometer using 6" x 6" unbleached muslin squares in 300 ml. of bleaching solution. The results, shown in Figure II, confirm the expectation that the efficiency of bleaching increases with temperature.

Solutions of increasing con-

centrations of available chlorine from ACL-85 show increasing bleaching power. This was demonstrated on unbleached muslin at 120°F. at a pH of 9.5-10, under conditions similar to those of the pH testing. The results are shown in Figure III.

While the initial bleaching action of ACL-85 is quite rapid. some time must elapse before the full capacity of the bleach is utilized. Also, the type of soil or stain being removed has a marked effect on the speed of bleaching. On unbleached muslin, it was found that in about 20 minutes the bleaching action was essentially completed under the test conditions. Figure IV shows this to be true at both 100 ppm and 300 ppm available chlorine concentration. These were run at 130°F, at a pH of 9.5-10, in a similar manner to the temperature investigation.

Table II. Comparison of Bleach Actives
Tea Stained cotton-pH 9.5-10

р	pm Availabl	e % Wh	iteness
Bleach	Chlorine	85°F.	120°F
NaOCl	100	103	100
ACL-85	100	97	102
Dichlorodime	thyl-		
hydantoin	100	99	97
NaOCI	25	93	90
ACL-85	25	94	86
Dichlorodime	thyl-		
hydantoin	25	44	64

Neither time, temperature, concentration or pH variations show any great difference from what might be expected. Other

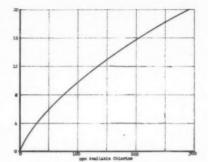


Figure III. Variation of ACL-85 bleaching with concentration. Unbleached muslin; 120° F., 15 mins.; pH 9.5-10. Percent whiteness increase shown on left vertical line of graph.

bleaching materials behave in a similar manner.

As to bleaching performance under specified conditions, we have specified sodium hypochlorite solutions as the "standard." Any bleach not essentially equal to this long-used standard does not do a completely satisfactory bleaching job.

A comparison of various bleaches shows significant differences in their bleaching action. Using tea-stained cotton cloth, at about pH 10, the results shown in Table II were obtained. It will be noted that all of the bleach actives tested performed adequately at a concentration of 100 ppm under the conditions of the test which provided too high a bleach to stain ratio, and failed to show differences in the actives. However, at the lower available chlorine concentration of 25 ppm, only ACL-85 and sodium hypochlorite gave adequate bleach-

Figure II. Variation of ACL-85 bleaching with temperature. Unbleached muslin: 100 ppm available chlorine; 15 mins.: pH 9.5-10. Percent whiteness increase shown on left vertical line.

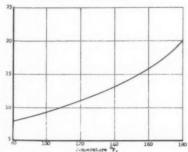
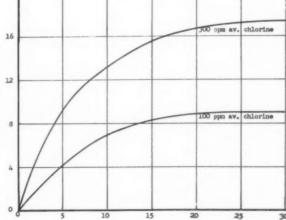


Figure IV. Variation of ACL-85 bleaching with time. Unbleached muslin; 130°F.; pH 9.5-10. Percent whiteness increase shown on left vertical line. Time, minutes, bottom line.



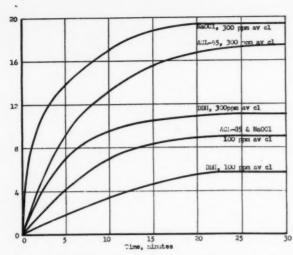


Figure V. Comparison of bleach actives. Unbleached muslin; 130° F.; pH 9.5-10. Percent whiteness increase shown on left vertical line.

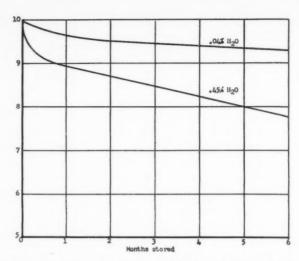


Figure VI. Effect of moisture on ACL-85 stability. ACL-85 and disodium phosphate mixture; sealed containers, 125° F. Percent available chlorine shown on left vertical line.

ing service at 85°F, and 120°F.

On unbleached muslin, comparative performance tests were run on ACL-85, sodium hypochlorite and chlorinated dimethylhydantoin. These tests were run on a 6" x 6" piece of cloth at 130°F., at a pH of 9.5-10, with 0.1 percent surfactant and two percent sodium tripolyphosphate present in 300 ml. of water. Figure V shows that at 100 ppm available chlorine concentration, ACL-85 and sodium hypochlorite gave the same result, while the chlorinated hydantoin produced only 60 percent of the whiteness increase. At 300 ppm, ACL-85 gave 90 percent of the increase obtained from NaOCl, while the dichlorodimethyldantoin again gave 60 percent. These results show that, for all practical purposes, ACL-85 does as good a bleaching job as sodium hypochlorite, the standard in the bleaching field.

Sodium hypochlorite has long been the standard also in dairy and food plant sanitizing, and a preliminary comparison of ACL-85 against this standard has been conducted. The Weber and Black technique was used, and shows that ACL-85 is equivalent to sodium hypochlorite on the basis of equivalent available chlorine concentration.

Concentrations of 50 and 100 ppm ACL-85 met the requirements of at least 99,9999 percent kill in

30 seconds or less against Escherichia Coli ATCC 11229, and Micrococcus Pyogenes variety aureus 209. The results of these Weber and Black tests are given in Table III. Although the original inoculant was somewhat less than 1 x 108 required for the test, the basic conclusion should in no way be altered by this fact.

Naturally, individual formulations will have a bearing on the effectiveness of the ACL-85 composition, as the effectiveness will vary with pH, and individual formulations must be tested for their own merits. Unfortunately, more extensive sanitizing data on the variation of effectiveness with pH, as well as other variables, such as the presence of peptone, are not available at this time.

(Turn to Page 129)

_	TABLE III. R				ack Tests	with	ACL-85	
Test Orga	anism: E. Col							
			xposure			100	m)	0 1
	U	15	30	60	90	120	Tube	Swab
	socyanuric A	cid (AC	L-85)-50	ppm.				0
10°	30×106	0.1			•	0	0	0
10-		21	0	0	0	0		
10-2		0	0	0	0	0		
	socyanuric A	c1d-100p	pm				0	0
10°	30×10 ⁶						0	0
10-1		2	0	0	0	0		
10-2		0	0	0	0	0		
	Typochlorite-S	Oppm.						
10°	30×10^{6}						0	0
10-1		2	1	0	0	0		
10-2		0	0	0	0	0		
_	anism: Microc			var. at	ureus 209			
	socyanuric A	cid-50 p	pm.					
10°	64x106						0	0
10-1		3	4	0	0	0		
10-2		0	0	0	0	0		
	socyanuric A	cid-100	ppm.					
10°	64×10^{6}						0	0
10-1		0	0	0	0	0		
10-2		0	0	0	0	0		
	Hypochlorite-5	mad 0						
10°	64x106						0	0
10-1		0	0	0	0	0		
10-2		0	0	0	0	0		

From data thus far presented on the comparison of ACL-85 with sodium hypochlorite, we see that the performance of this new product is satisfactory as a sanitizing and bleaching agent. Further evaluations may reveal differences in activity, especially in the sanitizing field, because of the different chemical structure, but these differences are expected to be of only a minor magnitude.

In the formulation of bleaches, detergent sanitizers or sanitizing agents with ACL-85, the use of usual detergent builders such as phosphates, silicates, carbonates, and surface active agents, is often desirable. We have attempted to determine the effects of these materials on the stability of ACL-85 in compounded dry mix formulations. The effect of a variety of these compounds on stability has been investigated, and some interesting facts have been observed.

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Theorizing for a moment, one would reason that the presence of moisture would be necessary for the decomposition of ACL-85, and further that in the absence of moisture no instability whatsoever should be noted. A comparison of ACL-85 under two different conditions shows this relationship of moisture to stability. The pure material was stored in an oven at 150°F, and in a constant temperature and humidity room at 80°F. (80 percent relative humidity) for several months. At 150°F., the loss of available chlorine was at a rate of 0.03 percent per 24 hours, but at the lower temperature and high humidity it was increased to a loss of 0.05 percent per 24 hours. The half life at the higher temperature is 48 months, while at the high humidity it decreased to 28 months. We would expect, therefore, that hydrated salts or high percentages of hygroscopic materials would decrease the stability of formulations.

The effect of moisture is more graphically illustrated in Figure VI, which gives the results of tests of 11 percent ACL-85 and 89 percent disodium phosphate mix-

(Continued on Page 137)

Looking Ahead . . .

By Melvin Fuld

President, Fuld Brothers, Inc.

N 1956, sales of specialty chemicals and sanitation products should continue to show an increase. In chemicals generally, an increase up to nine percent is predicted for this year. For finished chemical specialty products this rise should be about 14 per cent. Generally low inventories in the specialty field, plus new plants and a continued high level of industrial activity, should assure a growth in manufacturing activity. Total sales of basic chemicals should exceed twelve billion dollars for the first half of 1956.

This year will be another one of keen competition. Our industry will have to continue to improve its products and develop new ones to stay in business. This means increased expenditures for research. The total for all chemical specialties could reach three to four per cent of gross sales.

Basic economic indicators point to continued prosperity. Steel will operate at full capacity and will still be behind in deliveries at least for the first quarter of the year. Manufacturers of both durable and tinue a cautious inventory policy in 1956 as in 1955. Wage increases will be a factor in further boosting consumer income which will continue to be an important factor in absorbing expanded output of merchandise,

General construction in 1956 will be up about five per cent, but

non-durable goods foresee increases

in orders. However, most will not

enlarge inventories but will con-

General construction in 1956 will be up about five per cent, but the increase in building of stores and other service establishments is due for about a 17 per cent boost. Chemical specialty manufacturers can look for increased demand for maintenance supplies in this field. Maintenance, repair and operating supplies of large companies will remain at about 30 days for most, with a third of these firms on a 60 day basis.

Sales of consumer durable goods in the first six months of the year are expected to equal or exceed 1955, which was the best previous year on record. Personal durables, jewelry, silverware and similar products should show increases because of the high level of public spending. In our own field, higher incomes should be reflected in increased aerosol sales.

In 1956, there may be some political uncertainties and also some apprehension regarding the continuation of high level automobile production. A cutback in auto output could affect some sections of the chemical specialty business. But irrespective of this, the overall picture for the first six months is a continuation of operations at peak levels. The only things which can dampen our economy for 1956 will be a tightening of credit, rising inventories and election uncertainties.





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- 50% up to anhydrous for other uses.
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Allethrin vs. Pyrethrins

LTHOUGH the literature is replete with information concerning the effect of storage, light, heat and oxygen on the pyrethrins (1, 2, 3, 6, 8, 10), few reports have appeared on the stability of the synthetic insecticide allethrin

		Tab	le 1.		
Months At	% Purity	% Total Acid	% Allethrolone	% Anhydride	Color
0	93.5	0.7	_	_	6
9	92.8	1.5	-	3.7	-
32	91.8	1.8	0.2		8
60	91.0	2.5	1.0	3.1	9

The majority of the published comparisons between allebased on entomological results. Granett, et al (5) found that 0.1% solutions of allethrin were decidedly superior to the pyrethrins after heat. Blakith (1) reports that in dilute solutions applied on filter paper, allethrin is more stable than the protective dye. Aerosols containing formulations containing synergists, thiocyanates and DDT were unafand mortality over a two year storage period (9). Kido (7) found a crystalline allethrin isomer as determined by bioassay on house flies.

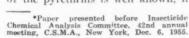
Since the relative instability of the pyrethrins is well known, it By Stanley K. Freeman

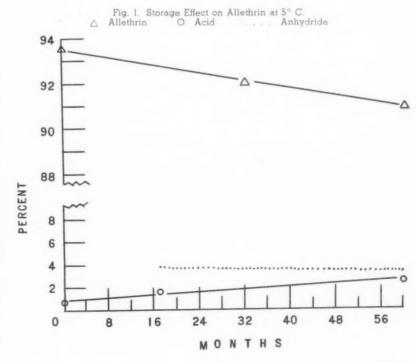
Benzol Products Co. Newark, N. I.

was the purpose of this investigation to quantitatively compare the action of heat and ultraviolet light on allethrin and the naturally occurring insecticide.

A sample of commercial allethrin was stored at 5°C and examined chemically over a period of five years. The results are recorded in Table 1 and graphically portrayed in Fig. 1. The original value for chrysanthemum monocarboxylic acid anhydride was not determined for the presence of this impurity and was not suspected at the inception of the experiment. By extra-

thrin and the pyrethrins have been exposure to ultraviolet light and pyrethrins but that this advantage is nullified upon the addition of a the synthetic insecticide maintained their effectiveness after 15 months storage (4) and allethrin aerosol fected with respect to knockdown that storing at room temperature and at 6°C for one year showed no evidence of chemical breakdown of





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TIES

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Tests show how economical methoxychlor can be the backbone of any spray.

			ESTIMATE	D % FLIES O	N FLOOR		% DEAD
		2 Min.	4 Min.	6 Min.	8 Min.	10 Min.*	24 Hours*
0.25% me	thoxychlor	3	36	75	90	29	38
0.50%	**	6	50	88	93	96	63
0.75%	**	9	61	93	97	98	79
1.00%	**	16	71	95	97	99	85

Methoxychlor is readily available. At 1% strength, it costs less than 8¢ per gallon of spray.

*Figures from standard Peet-Grady tests of methoxychlor space sprays

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Table 2. Storage Effect on Allethrin at Room Temperature

Months At Room Temp.	% Purity	% Total Acid	% Allethrolone	% Anhydride	Color
0	93.5	0.7	-	_	6
9	91.5	2.9	-	1.6	and the same of
32		6.6	2	0	12
60	78.8	7.5	7.5		14

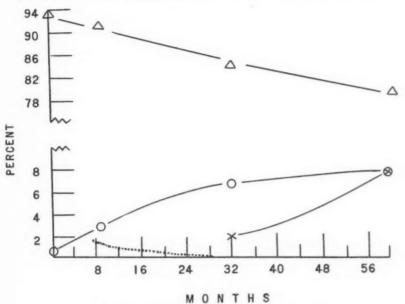


Fig. 2. Storage Effect on Allethrin at Room Temperature

Allethrin O Acid X Allethrolone . . . Anhydride

Table 3. Storage Effect on Allethrin at 75°C.

Days At	%	% Total	%	%	Cala
75°	Purity	Acid	Allethrolone	Anhydride	Color
0	93.5	0.4	0.1	2.0	6
0.3	-	-	Australia	1.0	-
1	-	1.5	-	0.4	-
7	93.8	1.8	0.1	0	-
30	93.8	1.8		-	13
90	93.1	2.2	0.2	_	14
200	91.0	2.3	0.6	_	15

Table 4. Storage Effect on Allethrin at 105°C.

		%				
Days At	%	Total	%	%	%	
105°	Purity	Acid	Allethrolone	Anhydride	Trans	Color
0	93.5	1.0	0.1	0.5	79.5	6
1	93.5	1.5	0.3	0.0	79.0	7
2		1.6	0.5	****	_	13
3	92.0	1.9	0.7		-	14
6	90.5	2.5	1.5	-	79.0	15
21	88.6	2.9	1.5	-	_	18
50	86.9	3.0	2.0		79.0	18+
90	82.1	3.1	2.5		merci.	-

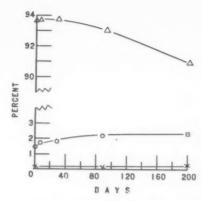


Fig. 3. Storage Effect on Allethrin at 75° C.

△ Allethrin O Acid X Allethrolone

polating the curve, the original allethrin sample contained ca. 4% anhydride. At the end of the five year period, the total decrease in purity and anhydride contents (3.4%) was balanced rather well by the combined increase of chrysanthemum monocarboxylic acid and allethrolone (2.8%). In an experiment not described here, it was ascertained that small amounts of the anhydride are quantitatively hydrolyzed to the corresponding acid at higher temperatures.

After five years at room temperature (20-35°C), allethrin exhibited a loss in assay and an accompanying anhydride decrease totalling to 18.7% (Table 2, Fig. 2). The acid and allethrolone increase of 14.3% falls short of the former value. Normal ester hydrolysis to form acid and alcohol would not yield this discrepancy.

When allethrin was heated at 75°C for six months (Table 3, Fig. 3) a 2.5% decrease in purity was observed. There occurred a 0.5% allethrolone increase and a negligible change in the acid content after correcting for anhydride loss.

Storing allethrin in an oven maintained at 105°C. for 3 months yielded a product containing a 6.4% difference between anhydride and purity decrease on the one hand and acid and allethrolone increase on the other (Table 4, Fig. 4).

The discrepancies in allethrolone and chrysanthemum monocarboxylic acid found as compared

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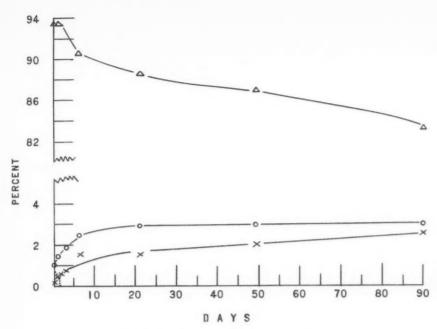


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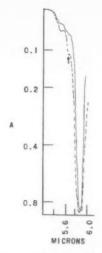


Fig. 5. --- Allethrin Stored at 105° C. for three month —Original Allethrin

Fig. 4. Storage Effect on Allethrin at 105° C. \triangle Allethrin O Acid X Allethrolone . . . Anhydride

with the theoretical quantities that would have formed by uncomplicated ester cleavage are presented in Table 5.

(To be concluded)

Literature Cited

- Blakith, R. E., J. Sci. Food and Agric. 3, 219 (1952).
- Brown, N. C. and Phipers, R. F., Pyrethrum Post 3, (4) 23 (1955).
- 3. Campbell, A. and Mitchell, W., J. Sci. Food and Agric., 1, 137 (1950).
- Fales, J. H., Bodenstein, O. F. and Piquett, D. G., J. Econ. Entomol., 45, 743 (1952).

		Table 5.		
	RCOOR' -	→ R'OH +	RCOOH	
Time	Temp.	% Total Discrepancy	% Acid Discrep.	% Alcoho Discrep.
5 years	5°	0.6	_	-
6 months	75	2.0	2.0	0
5 years	25	4.4	4.4	0
3 months	105	6.4	3.6	2.8

- Granett, P., Connola, D. P. and Lembach, J. V., J. Econ. Entomol., 44, 552 (1951)
- Hartzell, A. and Wilcoxon, F., Contrib. Boyce Thompson Inst., 4, 107 (1932).
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- Ann. Meeting, Dec. 19, 1954, p. 119. 8. Martin, J. T., Pyrethrum Post, 1, (3) 18 (1949).
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- 10. Potter, C., Ann. Applied Biol., 25, 836 (1938).

Weed Control Discussed

"No one really wants a weed killer. All that agriculture and our friends in other industries want is to get rid-of weeds as safely, easily and cheaply as possible" stated Dr. M. T. Goebel, research director of the D1Pont Grasselli Chemicals Department speaking before the charter meeting of the Weed Society of America held recently in New York. Discussing industrial weed control, Dr. Goebel stated that the excessive manpower required for mechanical control of unwanted vegetation has

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Explaining the solution of this problem and those of the new electric lines, gas and oil pipelines, turnpikes that spread rapidly over the country at the close of World War II, Dr. Goebel stated that switching to chemical weed control provided savings of 17% in the in-

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In California, roadside weed control is important in fire protection during the six months dry spell. In 1953, one city kept a crew working all summer long to clean up city streets, roadsides, parkways and other city property at a cost of nearly \$5,000. Chemical weed control accomplished the same result in 1954.

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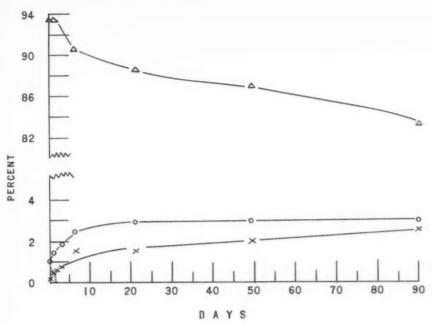
This is the conclusion of the Polak & Schwarz Aerosolresearch. The mutual effects of the component parts including the perfume in an Aerosol are so complicated that only a specially adapted perfume guarantees an enduringly stable Aerosol product. Make use of our extensive research.



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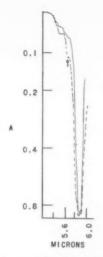


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for a little more than half that figure and they experienced some carryover in control into the year 1955.

ACL-85 for Bleach

(From Page 125)

ture stabilities. Two DSP moisture levels are shown, 0.45 percent and 0.04 percent. After six months in an oven at 125°F., the formulation containing 0.04 percent H₂O lost only 6.7 percent of its available chlorine, while the mix containing 0.45 percent H₂O lost slightly more than 21 percent. This mixture does not represent the stability to be expected in a properly formulated product, which is much better.

If the builders used in ACL-85 formulations are of the commercial anhydrous type, the formulations will normally lose some available chlorine during storage in open containers. This loss in available chlorine is negligible in the case of formulations of ACL-85 and sodium sulfate, and varies in differing degrees with the various alkaline builders used in the formulation.

There is also a general trend indicated that the more acidic salts tend to produce more stable formulations, but this apparently does not always hold true, and has a much lower effect on stability than does moisture.

Surface active agents have a definite effect on the stability of ACL-85. As is true with other hypochlorite materials such as calcium hypochlorite, nonionic surface active agents should not be used in formulations. They may react rapidly with ACL-85, liberating heat, and are not compatible. Anionics are generally compatible with ACL-85 but do affect stability. A typical alkyl aryl sulfonate, Santomerse No. 1, 40 percent active, was mixed with an ACL-85 formulation in varying amount to show this effect. Results of this test are shown in Figure VII.

The degradative effect of calcium hypochlorite on cotton under conditions of severe misuse

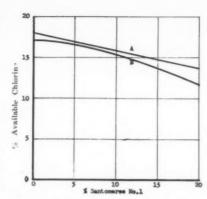


Fig. VII. Effect of Santomerse No. 1 on a typical ACL-85 formulation. A—After 18 days at 125°F., sealed; B—After 30 days at 125°F., sealed, or 90 days at 80°F., sealed.

has caused concern about the tendering effect of other solid bleach actives. This is probably due to the generalization that if one solid bleach will produce this effect, so will all others. Such, however, is not the case.

In what is considered a very severe test, 50 grams of active bleach materials were placed on 10" squares of cotton in flat dishes, moistened with 100 ml. of distilled water, covered and left for a given length of time. Results of this experiment are shown in Table IV.

Table IV. Effect of Solid Bleach Actives on Cotton 0/0 Tensile Strength Loss

Bleach	Unbleached Muslin, 24 Hrs	Sheeting 4 Hrs.	
ACL-85	31	8.8	
CaClOCl	100	88.0	
DDH	7.4	4.0	

J. T. Baker Bleaching Powder, analyzing only 35 percent available chlorine, was used in place of pure calcium hypochlorite, but even this material produced severe deterioration on unbleached muslin and cotton sheeting. In the case of unbleached muslin left for 24 hours, the cloth actually fell apart on rinsing. As would be expected, the less reactive dichlorodimethylhydantoin produced less tensile loss than ACL-85.

A less severe test, and one of more practical significance, was conducted by placing solid and formulated products in 4" x 5" pockets of cotton sheeting, and then placing the pockets in one liter of water at 140°F, for 20 minutes, agitating the solutions by hand. Ten grams of pure bleach were used in the first phase, while sufficient eight percent formulation (active to give eight percent available chlorine, 15 percent sodium tripolyphosphate, balance Na₂SO₄) to give 500 ppm available chlorine was used in the second. These were repeated in the presence of 0.1 percent of a heavy duty detergent. After bleaching, the cloths were cut open, rinsed in distilled water, centrifuged, and ironed on a flat bed press. Warp tensile strength was then measured. The results are given in Table V.

The variation in losses noted is probably due to the pH variation. ACL-85, giving a pH of about 3 in a one percent solution, formed a more reactive solution due to its greater solubility and lowering of the pH in the case of the unformulated tests.

It should be noted that the bleaching powder caused a greater loss in all cases than either of the chlorinated organics tested. While in the more severe test, dichlorodimethylhydantoin caused only one-half the loss that ACL-85 produced,

Table V. Effect of Strong Bleach Solutions on Cotton 0/0 Tensile Strength Loss. (140°F., 20 Min.)

	Deter	gent Absent	0.1% Det	ergent Present
Bleach	Pure!	Formulated ²	Pure!	Formulated ²
ACL-85	10.3	4.4	17.2	3.8
CaClOCl	42.7(3)	16.6(3)	Allender	******
DDH	9.3(a)	9.8(3)	5.5(3)	-1.1

- (1) 10 gm bleach per liter
- (2) To give 500 ppm available chlorine
- (3) Solid material remained at end of test

the second less severe test shows there would be little, if any, difference in tensile loss under the most drastic practical conditions between the two organic materials.

The fact that ACL-85 dissolved completely while the other materials did not, is probably quite noteworthy, in that the available chlorine concentration in the bath was undougtedly much higher in the ACL-85 bath, but not concentrated at one spot on the cloth. (2) This faster rate of solution of ACL-85 would prevent excessively high concentrations of available chlorine at one point on the cloth over an extended period of time, and thus prevent serious degradative effects or pinholing during practical usage.

A comparison of the time required for the dissolution of ACL-85 anddichlorodimethylhydantoin is presented in Table VI, which indicates that ACL-85 dissolves approximately three times as fast as dichlorodimethylhydantoin in distilled water and an alkaline salt solution. The rate of solution and solubility of ACL-85 depend very much on the pH of the solution, these being faster and greater at higher pH's. This is also true of cyanuric acid, the parent compound of ACL-85, which is relatively insoluble in acid media, but forms the highly soluble trisodium cyanurate in caustic. For this reason, it is usually desirable to include some alkaline salts in ACL-85 formulations.

In some sanitizing applications, the stability of solutions is important. In this respect, ACL-85 has some peculiarities. As would be expected, solutions containing two percent available chlorine lose a considerable amount of their activity on standing, but at a practical level of 100-500 ppm, the stability is quite good. An interesting effect has been noted as the pH of ACL-85 solutions varies. Figure VIII indicates that solutions at pH 3-9 are relatively stable, but at a pH of 9-11 some type of degradation takes

cates that solutions at pH 3-9 are relatively stable, but at a pH of 9-11 some type of degradation takes

(2) The solid material remaining in the pockets of the bleaching powder and dichlorodimethylhydantoin series was in one corner, and this area of the material was not used in the strength tests.

	Table VI. Rate of Solu	tion of Bleach Actives				
30°C.						
Bleach	Solvent	Concentration, %	Time for 95% Solution (sec)			
ACL-85	H ₂ O	1	720			
**	H ₂ O	0.5	300			
"	H ₂ O	0.2	180			
DDH	H ₂ O	0.5	>1800			
**	H ₂ O	0.2	540			
ACL-85	H,0+1% TS	SP.12H.,O 1	240			
**	H.,O	0.5	150			
00	H ₂ O	0.2	90			
DDH	H ₂ O	0.5	>:20			
**	H ₂ O	0.2	240			

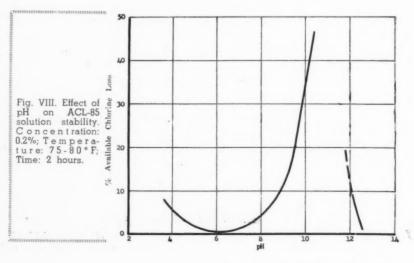
place, and the solutions are less stable. As the pH rises above 11.5, stability again improves. Solutions in this test were buffered to hold a given pH, and the temperature was 75-80°F, and the ACL-85 concentration 0.2 percent.

Since ACL-85 is an acidic compound, and dry bleaches or sanitizers usually will be formulated to give near neutral or basic solutions, it is necessary to use alkaline salts in formulations. The various orthophosphates or polyphosphates are often desired because of their detergent and water softening properties. As an example, Figure IX shows the various pH's attained by the use of sodium tripolyphosphate, tetrasodium pyrophosphate, and when greater alkalinity is desired, with sodium metasilicate, anhydrous, which is entirely compatible with ACL-85. While five percent salt solutions

were used in this study, the final solution pH is determined by the ACL-85 to alkaline salt ratio, and is essentially independent of the concentration.

All of the variables and conditions discussed above must be brought to bear when considering the proper formulation of ACL-85 into a product for a specific use, whether it be a bleach, a sanitizing agent, or a multi-purpose formulation. Each specific application for which ACL-85 might make possible a better or more convenient product has its own particular requirements. It is not intended to discuss these various applications in more detail at the present time.

Looking briefly at one specific application, to give an example of a finished ACL-85 formulation, let us consider a general purpose formulation that can be used in a variety of ways in the home, such



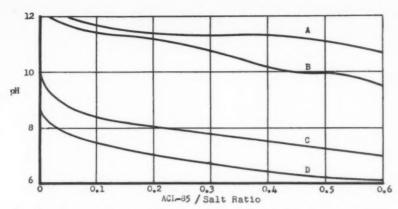


Fig. IX. Solution pH of ACL-85 with inorganic salts. A—Sodium metasilicate; B—50% sodium metasilicate and 50% sodium tripolyphosphate; C—Tetrasodium pyrophosphate; D—Sodium tripolyphosphate.

as for bleaching clothes, removing stains from porcelain, scrubbing tile, or possibly general purpose sanitizing. Such a product might be formulated as indicated in Table VII. In these formulations, the level of sodium tripolyphosphate is at a minimum and might well be increased to give a product with better cleaning and water softening properties.

These formulations, as given, have been checked for stability, and over a six month period showed an average loss per month of less than 0.1 percent and 0.2 percent chlorine for 0.12 percent and 0.5 percent moisture content, respectively. The higher the initial available chlorine content, the less the relative loss of available chlorine, since the loss is more or less absolute, depending on the initial moisture content. In some industrial type products of higher available chlorine.

ine content, this loss is not as significant percentagewise as with a product of much lower chlorine content. We feel the stability shown by these formulations to be satisfactory for a wide variety of applications.

We have discussed the use of ACL-85 to give bleaching and sanitizing compositions of performance equivalent to sodium hypochlorite, which are in a solid physical form, rapidly soluble in water, stable in a dry formulation. and safe when misused on fabrics. The results reported were determined under laboratory conditions to show the general effects of a number of variables. In practice, it is essential that finished formulations, whether for bleaching or sanitizing, be tested for their own merits. The value a consumer places on the added convenience of such a product will determine its acceptance at a price somewhat above that of sodium hypochlorite. It is our belief that ACL-85 provides a particular combination of desirable properties which is found in no other product, and that its advantages will make it a commercial success in providing better products for the bleaching and sanitizing markets.

ChemClean Damage Suit

Action has been started in the Supreme Court of the State of New York, Kings County, by Sidney Livingston, president and principal stockholder of ChemClean Products Corp. and Silver Star Chemical Corp., Brooklyn, N. Y., and by the two corporations for \$100,000 damages against Time Chemical Corp., Yonkers, N. Y., and Lionel DeWaltoff and Lawrence Handel, former stockholder and former employee, respectively, of ChemClean and Silver Star.

The complaint alleges that Lionel DeWaltoff and Lawrence Handel, while associated with ChemClean and Silver Star, conspired to organize Time Chemical Corp. to destroy the business of the two former firms. It is further alleged that in carrying out this conspiracy DeWaltoff and Handel took various secret formulas belonging to the plaintiffs and various secret lists of customers and that they have illegally interfered with contracts made between the plaintiffs and the plaintiffs customers. In addition, the complaint alleges that Time Chemical Corp., DeWaltoff and Handel illegally induced various key employees of the plaintiffs to leave their jobs without notice, thus seriously interfering with the ability of the plaintiffs to conduct their business.

It is also claimed that De-Waltoff fraudulently represented to Livingston that he was moving to California for reasons of health and therefore desirous of selling his stock in the plaintiff organizations, thus inducing Livingston to purchase his stock in ChemClean Products Corp., and Silver Star Chemical Corp.

Table VII. General Purpose Formulations of ACL-85			
0/0 by Weight of:	Formulation	Formulation No.	
	I	11	
ACL-85	5	10	
Sodium Tripolyphosphate	10	20	
Santomerse No. 1	1	1	
Sodium meta-silicate, anhy.	5	10	
Sodium sulfate	79	59	
pH, 1% Solution	9.5-9.7	9.5-9.1	
% Available Chlorine Loss per month:			
Sealed at 80°F.			
Commercial anhydrous salts used,			
0.12% H ₂ O Content:	0.1	0.1	
0.5% H _a O Content:	0.2	0.2	

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, packaging research into processing and handling methods in customer plants, and market research into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Facilities at Owens-Illinois are versatile. Talents are varied and many. So you can count on obtaining a container exactly suited to your needs—one that blends salesmaking beauty, product protection and utility in the proportions required to attract customers.

Hard-working Hypochlorite





140

SOAP and CHEMICAL SPECIALTIES

COMPLETE PACKAGING APPROACH



The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

or Gleam-making Polish-



there's an Owens-Illinois Package that <u>Sells</u> while it <u>Protects</u>

Your product gets an extra sales "lift" when it comes in a well planned package.

Such a package catches a customer's eye more quickly. It protects its contents — maintains the quality through many openings and closings, and it is convenient to handle and use.

All this adds up to a salespackage—the kind of packaging Owens-Illinois has planned and produced for decades.

No matter what the character of

your product might be, you can call upon Owens-Illinois, confident that you will receive the help of a marketing-minded supplier ready to provide glass containers of all types, capacities and designs, both stock and custom-made.

DURAGLAS CONTAINERS
AN (1) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

"Another product safely shipped in Inland 'protection-eered'* Containers"



The knockout punch in your household "bug-bomb" comes, believe it or not, from a delicate little flower that blankets the hilly slopes of Kenya in Africa. Man's oldest insecticide, the pyrethrum flower was used first by ancient Persians. And modern science still hasn't been able to improve on its ability to knock out bugs fast.

Nobody knows pyrethrum like the Minneapolis firm of McLaughlin Gormley King Co. They've been processing the flowers for over forty years. And for a good part of that time they wrestled with problems in packaging the liquid pyrethrum concentrate they ship to insecticide manufacturers. Because a single drum of pyrethrum extract may cost over \$3,500, a container that leaked or allowed contamination of

the product was a king-sized headache.

Some time ago they asked an Inland Steel Container man for help. Our laboratory came up with the answer in the form of a special baked-on lining that, at last, made it possible for MGK to ship safely in steel drums . . . and get the benefits of strength and economy only this type of packaging provides.

Now . . . ABOUT <u>YOU</u>. Whatever you make, and no matter how carefully you make it, the follow-through of good packaging is all-important. Chances are that steel packaging by Inland can solve your problems once and for all. For the last word on new developments you can use, write Bob Boecher, Dept. 310D

*the right container, with the right lining for your product

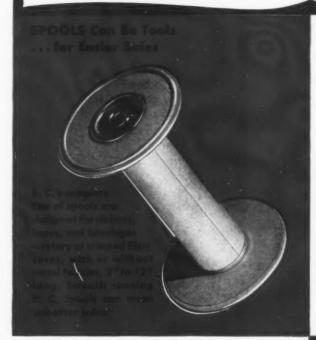


INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company • 6532 South Menard Avenue • Chicago 38, Illinois • Plants: Chicago, Jersey City, New Orleans, Cleveland and Greenville, Ohio

Full line of steel and stainless steel shipping containers, including galvanized and heavy duty ICC drums.

R. C. CUSTOM-DESIGNED FIBRE CONTAINERS CAN SOLVE YOUR PACKAGING PROBLEMS



Easier Sealing Selling...with
Plastic-Spouted CAULKING CARTRIDGE



Spout is heat-sealed with a foil-lined polyethylene patented seal — which extends shelf life indefinitely by preventing leakage and drying out of compound.

Spice is Nice...when packed in this Sliding-Dredge SPICE CAN



No more broken fingernails, when the housewife opens this can. Opens easily, even with wet hands. Spice can be sifted or spooned.

See Your R.C. CAN-MAN

Soo Your R.C. CAN-M/

MAIN OFFICE 9430 Page Blvd., St. Louis 14, Mo.

Branch Factories: Arlington, Tex.; Rittman, O.; Turner, Kans.

W. L. BENNETT, 126 S. Third St., Minneapolis 1, Minnesota • CAN SUPPLY COMPANY, 1006 W. Washington Blvd., Los Angeles 15, California C. E. DOBSON, 1003 Carondelet Bldg., New Orleans 12, Louisiana • L. C. MORRIS CO., P. O. Box 8042 Station F, 1156 Dalon Drive, N. E., Atlanta 6, Georgia • S. W. SCOTT & SON, 608 McCall Bldg., Memphis 3, Tennessee • R. C. CAN COMPANY, 225 W. 34th Street, New York City, N. Y. PALMER SUPPLIES CO., OF FLORIDA, Palmer Building, 209-211 E. Robinson, Orlando, Florida • JOE ROVIN, c/o Chicago Transparent Bag Co., 4806 W. Chicago Ave., Chicago 51, Illinois.

FEBRUARY, 1956



- ★ Designed exclusively for foam
- ★ Rapid pressure filling makes loading easier

10 Reasons Why PRESFOAM is best for Dispensing

- · "Ribbon" pattern dispensing . . . easier to use . . . reduces waste
- · Better wiping action-vertical opening designed to fit the hand
- · Positive locking
- · Positive direction . . . no "flying" foam
- · Positive shut-off
- · Even flow rate . . . every time!
- · No extra cover to replace . . . easy and economical to assemble
- Resistant to corrosion . . . stainless steel and all plastic—no rubber or rubber-like materials
- Attractive appearance . . . various color combinations available
- Schrader-made parts . . . Schrader assembly . . . Schrader 100% inspection . . . Schrader reliability backs each valve

The ideal foam valve is available for your forward planning. Now in the all-new Schrader PRESFOAM Valve you get the answer to today's and tomorrow's competitive foam dispenser problem: Customer satisfaction. Here's a valve designed with you and your customer in mind. For you it means faster filling since this is a rapid pressure filling valve that'll load fast! It's attractively designed — handsome, all plastic — no rubber — combined with corrosion-resistant stainless steel spring, available in combinations of colors to match your requirements. And what's more — every valve is backed by Schrader's unexcelled research and development facilities. For your customer, PRESFOAM means ribbon-pattern foam that's easier to use.

Get set with PRESFOAM — the all new foam valve that's designed exclusively for your foam needs.

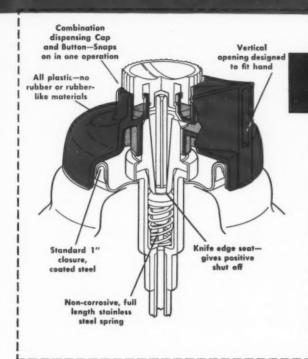
Schrader[®]

ESTABLISHED IN 1844

AEROSOL and FOAM VALVES made by

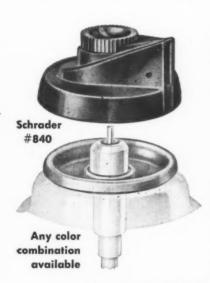
the leading producer of Standard Tire Valves

Presfoam valve



INSIDE STORY OF PRESFOAM

Take a closer look at this stellar performer. The all-new PRESFOAM offers stainless steel spring and all plastic construction-no rubber components. Button part of dispensing cap-that means no plastic threads to strip. And see, too, a minimum number of parts make up this valve - less chance of failure in use. It's economical for you to use. Remember: the same quality inspection methods you'd expect on any Schrader Product - are used on the new Schrader PRESFOAM Valve.



SCHRADER #840 PRESFOAM VALVE-for all foam type dispensing. Supplied in 1" closure with draft tube assembled. When ordering specify make and ounce capacity of can so right draft tube length can be furnished. Dispensing opening 3/4" x 1/4" vertical. Other openings to meet your specifications. Ribbon pattern. Positive wiping action. Positive direction. Coated steel closure - stainless steel spring and all plastic-no rubber components. Pressure filling type. Available in various colors. Priced competitively. Samples on request. Backed by the good name of Schrader.

Division of Scovill Manufacturing Company, Incorporated, Dept. 55 470 Vanderbilt Avenue, Brooklyn 38, N.Y.

I am interested in full information on your PRESFOAM VALVE

Title

TODAY

MAIL THIS COUPON



Harry E. Peterson president



Robert J. Peterson



Edward C. Hegeler secretary



Julius W. Hegeler



John K. Shea



Montfort A. Johnsen research director

All are comparatively young in years but old in experience gained primarily from positions and responsibilities in the filling industry.

Introducing The Men in Charge of this New Company

Offering a new service in contract filling all types of containers



With a modern, well-equipped plant in full-scale operation, we are ready to serve you as a contract filler experienced in handling both pressurized and liquid-type filling... and we are prepared to give you immediate service. We follow your formula exactly and fill the containers according to specifications. You need not invest a penny in equipment or personnel; we can take care of all filling, storing, shipping. Why not write, wire or 'phone for complete details?

PETERSONTILLING and Fackaging Co.



SPRA-TAINER.

UNIVERSALLY RECOGNIZED FOR PACKAGING SUPERIORITY

Depend on Spra-Tainer for outstanding achievements in aerosol packaging. For example, in the last Chemical Specialties Manufacturers Association competition, Spra-Tainer-packaged products won first awards in no less than four classifications!

Reasons for Spra-Tainer leadership:

- √ Seamless can construction
 - ✓ Art and design service now available to Crown customers

SUNTAN

TOTTON

RUST VETO

they way to stop to

THE

TON & CO.

OUGHTON LINE

PHILADELP

C.S.M.A. First Award Miscellaneous Personal Products Walgreen Co.,

> C.S.M.A. First Award Industrial Products E. F. Houghton & Co., Philadelphia, Pa.

FIRE CHIE PIRE EXTINGUISHER KILLS FIRE

NON POISONOUS
NON POISONOUS
NAL TYPES OF STANTING OF ME

C.S.M.A. First Award Miscellaneous Household Products Marlowe Chemical Co., New York, N. Y.



C.S.M.A. First Award Shave Creams Colgate-Palmolive Co., Jersey City, N. J.

Crown ... for Packaging Progress

Ask your Crown Sales representatives about Better Packaging and Better Service by Crown.

(Crown)

CROWN CORK & SEAL COMPANY, INC.

PHILADELPHIA . CHICAGO . ORLANDO . BARTOW . BIRMINGHAM . BALTIMORE . NEW YORK . BOSTON . ST. LOUIS . SAN FRANCISCO

ES



and GET MORE THAN GLASS



BALL TECHNICAL SERVICE

can help <u>you</u> cut costs, improve quality

Ball customers receive not only quality glass containers and metal closures that meet their most exacting specifications, but also—on request—counsel from experienced technicians on any production problem. Here are some of the many ways our staff of specialists may be able to assist you:

- Determining the types of machinery and equipment best adapted to processing and packaging your products.
- Improving your present processing methods.
- Increasing your production flow and line capacity.
- Choosing the kind of glass container to give your products the greatest possible sales appeal.

A CASE HISTORY

Production costs were getting out of hand for a midwest pickle packer. He had been advised that the only solution was a major investment in new machinery, but this was beyond his means. Early in 1954 he called in Ball Technical Service, which outlined a plan for completely rearranging his lines using most of the existing equipment and the labor of plant maintenance personnel. With a relatively small outlay for materials, he doubled his output and cut production cost per unit almost in half. Sounds fantastic—but it's true! Another case where it paid to call Ball first of all.

Ask about other Ball "Packaging Plus" services ... glass container design; materials handling; packaging research; processing and filling—with experts in each area who can help you reduce costs or increase profits.



BALL BROTHERS COMPANY · · · MUNCIE, INDIANA

Offices in All Principal Cities

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Packaging NOTES

Connecticut Doubles Plant

CONNECTICUT Chemical Research Corp., Bridgeport, Conn., it was recently announced by A. O. Samuels, president, is practically doubling its plant facilities with the acquisition of over 40,000 square feet of space in the former Locomobile plant in Bridgeport. This brings the company plant area to approximately 100,000 square feet with a daily production capacity of 250,000 aerosol units. Mr. Samuels also reports a sharp increase in the volume of Connecticut's Contract Packaging Division following completion of plans for new plant facilities both in the U.S. and abroad.

Mr. Samuels also announced a number of new appointments and promotions at Connecticut Chemical Research. Eric S. Farber, controller, has been elected assistant treasurer and a member of the board of directors. E. Don Pam has been appointed vice-president for sales in the Contract Packaging Division. He was formerly with Plax Corp. and Owens-Illinois Glass and has a

broad background in the drug, cosmetic and toiletries fields.

Edwin R. Lasner formerly regional sales manager, has been appointed assistant to the president in the Contract Packaging Division. Fred Presant has been appointed technical director in charge of product development, research and quality control. Milton F. Fowks has been made assistant to the technical director. He was formerly associated with the aerosol division of Bridgeport Brass.

Andrew J. Zelle has been placed in charge of packaging engineering for the company. He also was formerly associated with the across Livision of Bridgeport Brass. Leonard Kenner has been engaged as research chemist specializing in new product development in aerosol pharmaceuticals and antibiotics. He was formerly with McKesson & Robbins, Inc. and Block Drug Co. Joseph A. Boruch is the new director of quality control. He has been associated with Connecticut Chemical for some years.

Lawson H. Luth, formerly plant superintendent, has been promoted to works manager. He has a background of over 25 years in plant production. John W. Vellturo, formerly of U.S. Rubber, becomes quality control chemist. Miss Priscilla Porterfield has been appointed in charge of consumer research and services, 'Her work will be primarily the study of practical domestic uses of aerosol products. She has a background of twenty years in home service divisions of several large New England companies. Kenneth P. Lake will be in charge of cost analysis and estimating. Henry W. Kiekel has become sales service manager of the contract packaging division of Connecticut.

Millsplastics to Chicago

Continental Can Co., New York, has announced that its Millsplastic Division is now located in Chicago. General administrative and sales offices, and research department are at 2930 North Ashland Av., Chicago, 3. The Millsplastic Division manufactures a full line of plastic bottles, both stock shapes and custom molded.

New Ellis Can Booklet

George D. Ellis & Sons, Inc., Philadelphia, recently released a new four-page booklet describing the variety of Ellisco seamless metal cans for pharmaceutical, laboratory, production line and packaging use. The three-color booklet illustrates the various size cans, which range in size from 1/16 oz. to 16 oz., seamless in construction, with slip, screw or flanged top styles available.

Gair Ups La Freniere

L. J. LaFreniere has been appointed bottle carrier service manager of Robert Gair, Inc., New York, according to J. C. Hendricks, national sales manager of the Folding Carton Division. Mr. LaFreniere will make his headquarters at the Thames River Division of Gair and report to Mr. Hendricks. He joined Gair in 1951.

A. O. Samuels, seated at left, president of Connecticut Chemical Research Corp., Bridgeport, Conn., meets with key personnel in the new expansion program of the Contract Packaging Division. Around table, left to right, are E. Don Pam, vice president for sales; Miss Priscilla Porterfield, home service consultant; Lawson H. Luth, works manager; and Eric S. Farber, controller and assistant treasurer and member-elect of the board of directors. Standing, left to right, are Fred Presant, technical director; Joseph A. Boruch, director of quality control; Kenneth P. Lake, cost analyst; Andrew J. Zelle, director of package engineering and research; Milton F. Fowks, assistant to the technical director; Henry W. Kiekel, sales service manager; John W. Vellturo, quality control chemist; and Leonard Kenner, research chemist in pharmaceuticals and antibiotics.



ES



This 16th Century helmet displays the craftsmanship of medieval armor-makers. Expert fitting and positioning permitted mobility and visibility, while intricate carving brought distinctive, attractive appearance. Studied design and careful construction assured maximum

Jones & Laughlin Steel Containers provide dependable protection for your products. They are built of sturdy, highquality J&L Steel Sheet. Careful manufacture assures accuracy in all fittings and closures. J&L containers have a trim appearance which can be decorated attractively with colorful designs and illustrations by means of J&L's lithographic process.

Coatings and lacquers are evenly applied—both inside and outside. J&L pails and drums are chemically treated to keep all surfaces clean and dry.

Depend on J&L Steel Containers for the protection your products require.

Order them through plants in leading industrial centers. You will find J&L service prompt and efficient.



Jones 4 Laughlin



Continental Filling Expands

A program of expansion and modernization has been launched by Continental Filling Corp. at its Danville, Ill. and Hobart, Ind. plants, it was announced recently by Clarence Carter, president. Continental has installed a sprinkling system and new equipment to receive bulk shipments of insecticides in tank car lots as well as drums at its Danville plant. In addition, the refrigeration system has been enlarged to handle a greater volume of cold filling. At the Hobart plant, a new filling line for liquid products was installed as well as new stainless steel batch cooling and filling equipment for hair lacquer and similar aerosol products.

Gair Buys Timberlands

Robert Gair Co., New York, will soon purchase 93,660 acres of timberland properties from Mansfield Hardwood Lumber Co., Shreveport, La., it was announced recently by George E. Dyke, president of Gair. The purchase is the second major acquisition of timberland made by Gair in the past year. Last spring the firm bought 230,000 acres from Southern Advance Bag & Paper Co., Hodge, La.

New Wirebound Package

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American Box Co., Cleveland, recently announced a new "Pressure-Pak" wirebound crate for shipping various implements. According to the announcement, the new crate cut the shipping weight and costs by 65% for one shipper. Packing time is also cut considerably by using the new type wire slat packaging container. Hand nailing of crates is eliminated.

Conco Purchases Rights

Continental Can Co., New York, announced recently that it has purchased the exclusive manufacturing and sales rights for the turret seal caps. The caps will be manufactured in various sizes to fit metal cans, Millsplastic bottles and glass bottles. They are suitable as closures for baby oil, suntan lotion

and floor or automobile wax. Since the turret cap is firmly attached to the container, there are no parts to



Turret Seal caps will be manufactured and sold by the Millsplastic Division of Continental Can Co. The cap on the Millsplastic bottle is in "open" or pouring position, while the others are in "closed" position, sealing off contents.

be misplaced or lost when the container is opened to pour the contents.

Laughlin Gair Director

Hugh C. Laughlin, executive vice-president and a director of Owens-Illinois Glass Co., Toledo, was recently elected a director of Robert Gair Co., New York, according to an announcement by George E. Dyke, president of Gair. Mr. Laughlin replaces William E. Levis, a director of Owens-Illinois, who resigned from the Gair board.

Seely West Kinetic Mgr.

Samuel N. Seely has been named western district manager of the newly established western district office of the Kinetic Chemicals Division of E. I. du Pont de Nemours & Co., Wilmington. Mr. Seely will handle sales and technical service to users of "Freon" aerosol propellants and refrigerants in the area west of the Rockies.

Assisting Mr. Seely at the new district office at Menlo Park, Calif., will be R. E. Thomas, Jr., office manager; P. M. Dahlen and D. W. Nesbit, Jr., technical sales representatives in the Los Angeles and Seattle areas, respectively. The establishment of this new sales office was in conjunction with the "Freon" plant construction now underway at Antioch, Calif.

Heads Kimble Glass

R. H. Mulford has been elected president of the Kimble Glass Co., Owens-Illinois subsidiary, it was announced recently by Carl R. Megowen, Owens' president. Mr. Mulford who joined Owens-Illinois in 1933, has been a vice-president of the company since 1949 and general manager of the Kimble division since 1933. Stuart A. Kenworthy, vice-president of Kimble, has been named general manager of the Blown and Tubular Products Division.

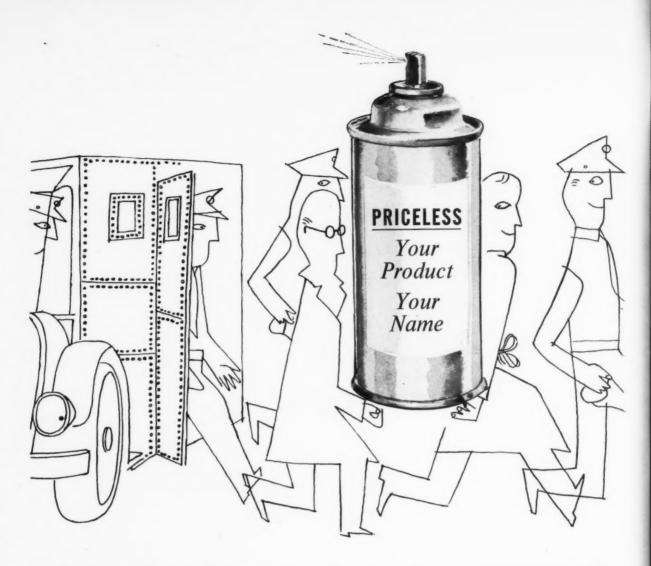
To Name Carton Winners

Winners in the eleventh annual Folding Carton Contest will be announced on March 12 at the annual convention of the Folding Paper Box Association, according to John C. Newell, Jr. The judges selected America's 100 best folding cartons at a recent meeting. The decision of the 12 judges will be kept under wraps until the convention.

Continental Can New Plant

Continental Can Co., New York, will build a new plant in Cincinnati which will double its present can manufacturing facilities in that city, according to an announcement by William M. Cameron, vicepresident in charge of the company's central metal division. New products to be manufactured at the plant will include cans for beer, shortening and liquid detergents. Cans for motor oils and foods will also be produced. These latter items are now being manufactured at the Continental plant on Highland Ave., in Norwood, which will be closed upon completion of the new plant.

The new plant will be located on a 40-acre site at Kemper and Montseller Roads in the Cincinnati suburb of Sharonville. It is expected to be in operation by July, 1957. Approximately 300 persons will be employed. Floor space will approximate 370,000 square feet of which 90,000 will be warehouse space as against 5,000 square feet in the pres-



what value do you place on your name?

...To Conn-Chem, your name is priceless! That's why so many of America's top aerosol brand names are produced by Conn-Chem. For, "going aerosol" is not just adding another product to your line... not just a matter of getting a "low price" from a filler. It's a new horizon that demands handling and controls by aerosoi specialists in the unselfish interest of your name.

Here at CONN-CHEM, your project is in the hands of a team of experts who know the problems of the aerosol field, from formulation to market shelf. So, whether you have a thousand or 10 million cans or bottles to fill . . . whether it's a drug, cosmetic, household, industrial or special product . . . whether you're already in aerosols or considering them . . . put your plans in the hands of the pressure packaging specialists with the longest experience in the industry. It takes a lot of know-how and continual vigilance to keep the quality of your product consistent with your good name! It takes CONN-CHEM!

Talk with our Technical Advisors in complete confidence. No obligation on your part.

CONN-CHEM for complete aerosol service Creative Chemistry . . . Engineering . . . Packaging

CONNECTICUT CHEMICAL RESEARCH CORPORATION, BRIDGEPORT 5, CONN., FOREST 8-2511 Canada: Connecticut Chemical Canada, Ltd., Curity & Hollinger Rd., Toronto • England: Midland Aerosols, Ltd., Wolverhampton

POWDERS

Continental is

TOPS

in engineering plastic bottles to meet your needs

HASAL SPRAYS

DEODORANTS

Spray tops by Continental are scientifically engineered to do the most efficient job. So are our Millsplastic bottles.

Expert engineers establish the correct designs and dimensions to dispense your product properly. This can be done either with our wide line of standard bottles and spray assemblies, or individually created designs that will make your product literally drop off the shelf.

Whether it's squeeze bottles with spray components or plastic bottles for other uses, come to Continental. We'll create a bottle for you that will look good, work well, and sell your product. Call us soon.

TAILOR-MADE

TIES

MILLSPLASTIC DIVISION

135 SO. LA SALLE STREET, CHICAGO 3, ILLINOIS



G. BARR & COMPANY

Plants in: Chicago Los Angeles

cides, pharmaceuticals,

waxes, cleaners, polishes,

household products ... your new product idea.

ent warehouse. Continental, founded in 1904, entered the can field in Cincinnati in 1928 by acquiring the U. S. Can Co. The company now has 80 plants in the U. S., Canada and Cuba.

New Bed Belt Conveyer

Island Equipment Corp., Long Island City, N. Y., recently announced the availability of a new light duty conveyor. This new convevor is called "The Light Duty Slide Bed Conveyor" to distinguish it from the standard "Unitized Slide Bed Conveyor." The unit is available in belt widths of eight to 12 inches and 16 inches, and in lengths from 10 to 70 feet maximum in multiples of 10'0". Standard elevation is adjustable from 31 to 37 inches. The unit is powered by a right angle gearhead 1/4 HP motor for fixed belt speeds of 25, 371/2 or 50 fpm. The unit is available with or without side leaves or guard rails.

Rotary Drum Filler

A rotary drum filler, manufactured by Drum Equipment Corp., Union, N. J. has been installed at a New Jersey oil refinery for filling five gallon Army blitz cans with gasoline. According to the announcement, the machine is filling 20,000 five gallon cans in a twenty-four hour period with the help of three men, one to remove the caps from the cans, one to operate the machine and the third to replace the caps as the cans leave the filler upon completion of the filling cycle.

Conco Names Wallace

J. R. Wallace was appointed recently as products sales manager of non-food items for the metal division, Continental Can Co., New York. He previously has served as district sales manager in Continental's Boston offices.

New Filling Firm

Capitol Packaging Co., Forest Park, Ill., recently entered the aerosol filling business on a contract basis. The firm was organized in July 1955 and occupies 15,000

Duty nvey-sland Corp., City,

New "Light Duty Slide Bed Conveyor" of Island Equipment Corp., Long Island City, N. Y.

square feet of floor space in Forest Park, a suburb of Chicago. Its plant equipment includes a high speed pressure fill unit, automatic labeling equipment, various blending and compounding equipment and a high speed metal and vinyl collapsible tube filling line.

D&O Aerosol Odor Masks

Aerosol Insecticide masking agents are listed in a new four-page folder published last month by Dodge & Olcott, Inc., New York. Prices and effective proportions are given for masking odors for eight of the most commonly used active insecticidal ingredients: Lethane, chlordane, methxychlor, malathion, pyrenone, sulfoxide, thanite, and strobane. Other bulletins are in preparation covering masks for other product groups.

Pfaudler Corrosion Seminar

The first corrosion seminar of 1956, the tenth such meeting of corrosion engineers sponsored by Pfaudler Co., Rochester, N. Y., was held at the Sheraton Hotel, Rochester, Jan. 30 through Feb. 1. Forty engineers from chemical, petroleum and food industries attended the ses-

sions which were conducted as round table discussions of corrosion problems. Talks by leading corrosion engineers were followed by discussion periods. Since the corrosion seminars began in 1953, 284 engineers from over 100 companies. have attended. The list of invited engineers is held to forty to keep the group small. The next series of seminars is scheduled for Rochesterearly in June.

New Oakite Booklet

A newly revised booklet on-Solvent Detergents has been issued by Oakite Products, Inc., New-York. The 16-page booklet outlines. the use of solvent detergents,-solvents compounded with surface active agents,-used without heat toremove carbonized grease and oil, certain types of paint, and providetemporary rust protection aftercleaning. Methods of application, hand, tank, sprayer, and machine, are described including procedures. and solution concentrations. Advantages, removal of heavy soil incold application, easy rinsing with cold water, and minimum fire danger, are pointed out. Copies can besecured from Oakite Products, Inc., 157 Rector St., New York, 6, N. Y., New six-ounce pressure container with plastic top now being used by Mennen Co., Morristown, N. J., for its regular and menthol-iced "Foam Shave." Cans, produced by American Can Co., New York, are lithographed in red, green and white.



Sealed, key-open container is used for "J-Wax," a new auto paste wax with a built-in cleaner by S. C. Johnson & Son, Inc. Product is designed to remove road film and oxidized paint and leave long lasting finish. Pretreatment of cars may involve washing with clear water or mild detergent to remove grit and soil. Claimed to be first product of its type packed in sealed, key-open can, "J-Wax" retails for \$1.95.

"Redy-Rinse," new liquid rinsing agent for use with commercial dishwashers in hotels, motels, restaurants, diners, taverns and institutions, was announced recently by West Shore Manufacturing Co., Reading, Pa. Glass at right shows how water sheets cleanly when new rinsing agent is used. Glass, left, has dishwater clinging to it when rinse agent is not used.



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What's New?



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w, improved garden insecticide, "Antrol" push-button multi-purpose ose Spray Flower Bomb" has been developed by Boyle-Midway, New York. Product contains two new fungicides, Captan, for confol black spot, and Karathane for checking powdery mildew. Formation also includes lindane, pyrenthins and rotenone insecticides dihe synergist, piperonyl butoxide. Fifteen ounce aerosol container alls for \$1.59.

"Sta-Brite" lens cleaner of Sta-Brite, Inc., Lucedale, Miss., is now being distributed in colorful, bullet-shaped plastic containers designed for convenient handling and carrying. Priced at 49 cents, 13 "Sta-Brite" lens cleaner packages are arranged on easel-back counter display card. Containers have blue caps and red lettering. They are supplied by Owens-Illinois Glass Co., Toledo.



New aluminum foil wrap-around label by Aluminum Company of America, Pittsburgh, is shown on can of "Babbitt's Cleanser," right. New label, produced by Milprint, Inc., Milwaukee, for B. T. Babbitt Co., New York, is red, white and blue. Older label is shown at left. Three-unit merchandising sleeve, shown above, is being used in national introduction of the product.



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Union Bag Names Doran

A. B. Doran was appointed recently as director of chemical sales for Union Bag & Paper Corp., New



A. B. Doran

York. Mr. Doran has been in the chemical sales division of the firm since 1946 when he joined the company. His position is a newly established one in the firm. At the same time Union Bag & Paper announced that its new tall oil distillation plant will begin operations in March.

Western Packaging Show

Fully 75 percent of the exhibit space at the sixth annual Western Packaging and Materials Handling Exposition to be held July 10-12 at the Pan Pacific Auditorium, Los Angeles, has been sold, it was announced recently by Saul Poliak, head of Clapp & Poliak, Inc., New York, producers of the trade show.

Aerosol Safety Record

The "unique safety record" of the aerosol industry can be maintained by adherence to uniform labeling practices and a continued educational program regarding the use of products and disposal of empty containers, the Compressed Gas Association was told at its 44th annual meeting in New York, Jan. 23.

More than 750 million units of aerosol products have been produced and sold since their introduction on the civilian market immediately after World War II, L. P. Hall, Jr., technical representative of the Kinetic Chemicals Division of E. I. du Pont de Nemours & Co., Wilmington, said. "The safety record of this new industry is nothing short of remarkable", Mr. Hall declared.

The extremely low incidence of accidents can be attributed in large part, Mr. Hall said, to the work of industry groups like the Chemical Specialties Manufacturers Association and the Compressed Gas Association. Both groups, he noted, have worked closely with the industry and government agencies in establishing manufacturing procedures that assure safe products and in promoting adequate precautionary labeling practices to assure proper consumer use of the finished products.

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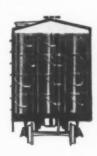
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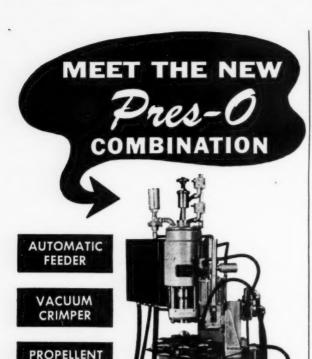


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NEW Erade Marks

THE following trade marks were published in recent issues of the Official Gazette of the U.S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of op-

Floor Show—This for floor polish. Filed Mar. 3, 1955 by R. M. Hollingshead Corp., Camden. N. J. Claims use since Feb. 15, 1955.

Fullduty—This for liquid self-polishing floor wax. Filed Apr. 22, 1955 by Fuller Brush Co., Hartford, Conn. Claims use since on or about Aug. 31, 1951.

Just — This for self-polishing wax-like finishes for wood, linoleum, composition, terrazzo, asphalt, rubber and plastic tile floors. Filed Mar. 10, 1955 by Associated Just Distribu-tors, Inc., Baltimore. Claims use since Mar. 10, 1955.

Auto Show—This for automobile cleaner and polish. Filed June 20, 1955 by R. M. Hollingshead Corp., Camden, N. J. Claims use since May 23, 1955

fulbrite—This for floor polish. Filed Apr. 22, 1955 by Fuller Brush Co., Hartford, Conn. Claims use since on or about Sept. 8, 1953.

Bug Blast-This for insecticides. Filed May 28, 1954 by Foley & Co., Chicago. Claims use since Apr. 1, 1954. Subj. to intf. with SN

Bug-Blaster—This for insecticides. Filed June 21, 1954 by Mylan, Inc., Minneapolis. Claims use since Apr. 30, 1954. Subj. to intf. with SN 667,307.

Virginia Chemicals—This for parentle insecticides for functions of the statement of the stateme

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aerosol insecticides, fungicides, de-odorants. Filed Mar. 14, 1955 by Vir-ginia Smelting Co., West Norfolk, Va. Claims use since Sept. 7, 1941, as to "Virginia."

Stiefel-This for medicinal and toilet soaps and shampoos. Filed Oct. 11, 1954 by Stiefel Medicinal Soap Co., Oak Hill, N. Y. Claims use since

Co., Oak Hill, N. Y. Claims use since Dec. 6, 1947.

de-lite — This for powdered cleaning compound. Filed Mar 8, 1955 by Andrew Decapio, doing business as A & D Cleaning Co., Mansfield, Ohio. Claims use since Aug. 31, 1954. Subj. to intf. with SN 692,823.

Lustrapon — This for highly concentrated shampoo base containing lanolin. Filed Mar. 22, 1955 by Wella Corp., Englewood, N. J. Claims use since Mar. 1, 1955.

wella Corp., Englewood, N. J. Claims use since Mar. 1, 1955. poll-ene—This for cleaning and washing compounds. Filed May 2, 1952 by Advanco Laboratories, Sagi-naw, Mich. Claims use since Jan. 1, 1939.

Shampooch—This for arimal shampoo. Filed July 22, 1954 by Jacob Finkelstein, doing business as Norris Laboratories, Norristown, Pa. Claims use since on or about Mar. 16, 1954.

Magicleaner-This for cleaning fluid for rugs and upholstery. Filed Nov. 5, 1954 by Stanley F. Platek, doing business as Magicleaner Co., Newark, N. J. Claims use since Aug. 7, 1933

Giant—This for soap. Filed Feb. 1, 1955 by Armour & Co., Chi-cago. Claims use since October 1922.

Chiffon—This for soap. Filed Feb. 1, 1955 by Armour & Co., Chi-cago. Claims use since December

Hexol-This for germicide having disinfectant, antiseptic, deodoriz-ing and cleansing properties. Filed Feb. 17, 1955 by Hexol, Inc., San Francisco. Claims use since Sept. 2,

dual dip-This for dish cleaner. Filed Apr. 19, 1955 by Diversey Corp., Chicago. Claims use since June 8,

fulsol—This for liquid deter-gent composition for household use.

Filed Apr. 22, 1955 by Fuller Brush Co., Hartford, Conn. Claims use since on or about Feb. 24, 1951.

CH-100 — This for cleaning compound in powdered form and sold in bulk containers for commercial and industrial use Filed June 2, 1955 by industrial use. Filed June 2, 1955 by Diamond Alkali Co., Cleveland. Claims use since on or about August 1953.

Fluoristan—This for decay-inhibiting chemical composition to be
used in a dentifrice. Filed Feb. 23,
1955 by Procter & Gamble Co., Cincinnati. Claims use since Dec. 21,

Instant Nu-Air — This for air deodorizers. Filed Mar. 14, 1955 by Bengal Co., New York. Claims use since Jan. 3, 1955.

2-4 Doy — This for weed killing composition. Filed Mar. 28, 1955 by Dow Chemical Co., Midland, Mich. Claims use since July 18, 1947.

Badger — This for insecticides. Filed Apr. 18, 1955 by Blitz Products, Inc., Chicago. Claims use since Jan. 10, 1955.

Shavers' Aid — This for aero-

Jan. 10, 1955.

Shavers' Aid — This for aerosol lubricant and disinfectant for electric razors. Filed July 1, 1955 by Dodge & Olcott, Inc., New York. Claims use since May 20, 1955.

Clairol — This for shampoos. Filed Sept. 17, 1954 by Clairol Inc., Stamford, Conn. Claims use since on or about Jan. 16, 1931.

Drew Hy-Tess CK — This for dishwashing composition. Filed Oct. 15, 1954 by E. F. Drew & Co., New York. Claims use since Aug. 2,

York. Claims use since Aug. 2,

- This for all-purpose

cleanser in powdered form. Filed Mar. 9, 1955 by Lewis C. Brooks, Milwaukee. Claims use since Jan. 10, 1955.

Ace — This for ice machine cleaner. Filed Mar. 28, 1955 by Atlantic Chemical & Equipment Co., Atlanta. Claims use since June 9, 1952.

This for waching and Boom - This for washing and

cleansing detergents. Filed Apr. 5, 1955 by E. J. C. Perry, doing business as Griswold and Perry Co., San Fran-cisco. Claims use since November,

Double-Glo — This for cleanser and deodorizer for household use. Filed Apr. 11, 1955 by Nicholas J. Feola, doing business as Luston Products Co., Charlestown, Mass. Claims use since Mar. 16, 1955.

if — This for general purpose detergents particularly adapted for automatic and conventional washing machines. Filed Apr. 14, 1955 by Tom Daly Electric, Inc., Barberton, O. Claims use since on or about Apr. 1.

Claims use since on or about Apr. 1,

April — This for soap and detergent for household and laundry use. Filed May 3, 1955 by Essential Chemicals Co., Milwaukee. Claims use since Apr. 1, 1945.

Thunderbird — This for soap. Filed May 6, 1955 by Houbigant, Inc., New York. Claims use since Apr. 27, 1955.

Super "C" — This for dry cleaning soap for fabrics. Filed May 9, 1955 by Caled Products Co., Cottage City, Brentwood, Md. Claims

19, 1955 by Calcular Frontiers Co., Cottage City, Brentwood, Md. Claims use since Feb. 9, 1955.

Trico — This for glass cleaner.
Filed May 11, 1955 by Trico Products Corp., Buffalo. Claims use since

on or about June 1, 1947.

Friendship's Garden — This for soap. Filed May 23, 1955 by Shulton, Inc., Clifton, N. J. Claims use since July 31, 1953.

Sir-V-Col — This for antisentic soap. Filed May 31, 1955 by

septic soap. Filed May 31, 1955 by Edwin W. Hirsch, doing business as Research Laboratories,

Claims use since Jan. 15, 1955.

Procosuds — This for detergent for industrial and marine use.
Filed June 20, 1955 by New Process Chemical Co., San Francisco. Claims use since 1940.

This for the Process of the form of the Process of the Process

This for shampoo. Two Do -

Two Do — This for shampoo.
Filed June 23, 1955 by Colgate-Palmolive Co., Jersey City, N. J. Claims use since Oct. 29, 1954.

Wisk — This for detergent for laundry use. Filed Sept. 30, 1955 by Lever Brothers Co., New York.
Claims use since Sept. 23, 1955.

Black Leaf — This for insecticides of the powerful of the production of the college of the powerful of the production of the college of the powerful of the production of the college of the powerful of the production of the p

cides, rodenticides, etc. for household and sanitary uses. Filed July 9, 1954 by Virginia-Carolina Chemical Corp. Richmond, Va., to Diamond Black Leaf Co., Cleveland. Claims use since December, 1910.

December, 1910.

Dawson — This for fumigant.

Filed Feb. 11, 1955 by Ferguson

Fumigants, Inc., Ferguson, Mo.

Claims use since Oct. 24, 1949.

ful-kill — This for insecticide.

Filed Apr. 22, 1955 by Fuller Brush

Co., Hartford, Conn. Claims use since

on or about May 19, 1954.

Ant-Line — This for insecticides.

Filed Apr. 28, 1955 by Andover

Silver Co., Andover, Mass. Claims use

since Feb. 28, 1955.

Gulf—This for anti-freeze solu-

Gulf—This for anti-freeze solution. Filed May 16, 1955 by Gulf Oil Corp., Pittsburgh. Claims use since Aug. 9, 1939.

Fluoramine — This for denti-frice. Filed Apr. 15, 1955 by Mervin L. Jordahl, doing business as Fluor-Amm-Ine Co., Minneapolis Claims use since Mar. 10, 1948.



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HE word corrosion denotes destruction of a metal by chemical or electrochemical action. A familiar example is the rusting of iron. Chemical corrosion, which usually starts rapidly, often becomes slow as soon as an obstructive layer of corrosion product is formed. If the corrosion product is precipitated at a distance or is removed by vibration or bending the action will continue at a normal rate.

As most of us are interested in aqueous and nonaqueous media for pressurized products and oil solutions I will confine my discussion to this phase.

Methyl chloride which is



commonly used as a propellant for greenhouse aerosols because of its solvent properties has presented some interesting corrosion problems. If the solution contains 0.03% moisture, corrosion of the iron occurs with a slight scale formation, and if the moisture content is increased to more than 0.05%, the corrosion becomes serous. If the aerosol solution contains DDT with a moisture content of more than 0.05% the initial corrosion reaction appears to start a secondary reaction by removing hydrochloric acid from the DDT molecule. This results in the appearance of deep pitting within a few hours and within 10-14 days the pits will extend through approximately 1/8 inch of steel. Hydrochloric acid is always present in the solutions. The organic phosphorus insecticides such as tetraethyl pyrophosphate and parathion dissolved in methyl chloride have been found to react with the steel walls of the pressure containers and form a scale containing iron and phosphorus. The speed of this reaction increased markedly when the water content was over 0.05%.

The wartime high pressure aerosol units after several years of storage were found to have a number of points that had been attacked by severe corrosion. As you know the steel shell was equipped with a fuse plug which was soldered with an acid flux containing NH₄C1. Ammonium chloride when heated forms ammonia and hydrochloric acid and the small amount of free hydrochloric acid remaining at the junction between the fuse and the container would attack the iron and the fuse plug and in time would form small channels for the propellant to escape. In most cases the shells of the unit were stamped in two sections and later brazed in a hydrogen furnace. If the production of the containers exceeded the filling capacity, the shells were stored in cold warehouses. During the storage period the shells cooled and would naturally be filled with moist air. The steel adsorbed large amounts of moisture and even though a partial vacuum was made prior to filling with the aerosol solution, most of the moisture would be entrapped.

Dichlorodifluoromethane (propellant 12) at room temperature will only hold 80 p.p.m. of water. This means that most of the moisture would be above the propellant liquid level. The water content of a large number of wartime units was found to vary from 250 to as high as 450 p.p.m. Therefore, large amounts of water would be in the vapor phase. In most cases the containers were stored in an upright position which caused severe corrosion to the fuse plug and to the steel above the level of the liquid.

The early insecticide formulas were composed of pyrethrum extract, sesame oil and propellant

FEBRUARY, 1956

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^{*}Paper presented before 42nd annual meeting Chemical Specialties Manufacturers Assn., New York, Dec. 7, 1955.

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SOAP and CHEMICAL SPECIALTIES

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12. The pyrethrum extract at that time was mostly of the oleoresin type which contained 4 percent or more of insoluble material. The insoluble material accumulated on the side of the container thus giving a lacquer-like coating. When DDT was incorporated in the formula and the pyrethrin content reduced, the water content became a serious problem.

Corrosion Overlooked

L ATE in 1946 and early in 1947 when the lightweight container was being tested on an experimental basis, very little attention was paid to the corrosion of the container. The main effort was directed toward satisfactory formulas and combinations of liquefied gases for reduced pressure propellants. However, when the cans which had been filled on humid days were opened, they always showed severe corrosion around the soldered valve. Cans filled on dry days showed little or no corrosion.

After the Armed Forces became interested in the low pressure type unit and asked for a specification which included a 5-year storage requirement, we started extensive tests with units containing known amounts of water. The cans were lacquer coated and tin lined. The valve bodies were made from brass, aluminum and steel. In most cases the brass had been protected with an oxidation process but a number of valves had been plated with nickel or chromium. The aluminum valves had been treated with an anodizing process. A few cans from each lot were examined at 5-month intervals for corrosion. In every case the severe corrosion was found in the part of the container in contact with the vapor phase. When the cans were stored with the valves down, little or no corrosion was found with any type valve. When the valves were stored upright corrosion was always found. The brass valves showed little or no corrosion even though the water content was more than 200 p.p.m. Aluminum body valves all showed severe corrosion when the water content was more than 140 p.p.m. The exposed parts of steel valves all showed severe corrosion when the water content was greater than 150 p.p.m.

Aluminum is anodic to many of the common metals in the presence of water. This means that an electrolytic cell is likely to occur where aluminum components are in contact with parts made of dissimilar metals. Contact with steel often causes action on aluminum.

The most common methods for protecting aluminum-base alloys are as follows:

- 1. Alloy selection
- 2. Joint sealing compounds
- Anodic and surface conversion coating
- 4. Organic coatings
- 5. Metal spray coatings
- Electro deposited coatings

Zinc Retards Corrosion

TINC has been used to protect A steel for centuries largely because of the good corrosion resistance of zinc. However, solutions containing alcohols and ketones will remove the zinc coating in a short time. The presence of zinc has been found to retard corrosion of the steel even though the coating has been removed. Results have been reported when pH value for solutions containing zinc were as high as 8.5. Most of the common inhibitors such as sodium chromite, sodium borate, sodium bicarbonate, sodium phosphate, etc., depend on the alkalinity to control corrosion of steel.

The largest use of nickel and chromium coatings is for objects which must not only be protected from corrosion but must also present a bright and pleasing appearance. Nickel is especially good on brass as it will not crack with age.

Chromizing is a term applied to a process where chromium powder and aluminum are dusted on a steel surface and heated to 2500° F. in a hydrogen furnace. The corrosion resistance of this type of treatment is similar to that of high chromium steels.

Tin coatings are largely used in the manufacture of containers.

The strength and economy of materials are combined with corrosion resistance, ease of soldering, and good appearance. Formerly the coating was applied as a hot dip process but tinning by electrodeposition has largely replaced the hot dip process.

The weaknesses of tin coatings as well as the coatings of other metals is the incomplete coverage caused by irregularities in the steel sheet. The number of pin holes varies with the thickness of the coating and with the thinner electrolytic coating it is almost impossible to count the number of pores. Tin is cathodic to iron in the tin-iron couple and actually aids corrosion at the pinholes. However, this effect is of slight practical importance. Rust forms at these points and covers the tin plate but the tin remains and gives mechanical protection. In a large number of cases with food products the corrosion to tin linings has been reduced to a minimum by applying enamel or lacquer to the tin plate. Addition of sugar and gelatin tend to inhibit corrosion where water is present whereas sulfur acts as an accelerator.

Organic coatings have come into common use during the past few years. In most cases the resinous film is not in itself a corrosion inhibitor. The protection it gives to the basic metal may be measured by the diffusion rates of liquids, gases or vapors that are present. The thickness and the continuity of film are the most important factor for its effectiveness. Organic coatings over tin plate have been found satisfactory for a number of aerosol products. The addition of pigments must be carefully chosen as they may alter the permeability properties of any given resin.

Accelerated aging tests in most cases have been found impractical for corrosion studies of aerosol containers. Elevated temperatures, cold temperatures and continuous shaking fail to give the same information that will be obtained by holding the units at room temperature.

(Turn to Page 193)

THE PLAIN TRUTH ABOUT PIPERONYL BUTOXIDE

It's one of the most amazing insecticidal synergists to come to light in the laboratory in recent years.

In combination with pyrethrum, piperonyl butoxide forms the versatile Pyrenone* concentrates — steps up the killing power of pyrethum at least 10 times. Butoxide itself has definite insecticidal properties. Yet it is virtually non-toxic to man or warm-blooded animals. It is equally as safe as pyrethrum, if not more so.

STABILIZES PYRETHRUM

Piperonyl butoxide also stabilizes pyrethrum in these two important ways:

- Reduces deterioration of pyrethrum by screening out ultra-violet light.
- Acts as an acid acceptor and thus retards decomposition and polymerization of pyrethrum.

Net result of this two-way stabilizing action is to increase the shelf-life of the end product — and to make it more ef-

fective in practical applications against insects for *longer* periods of time.

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Readily soluble in all common organic solvents, piperonyl butoxide is also a solvent in its own right. It minimizes, and often makes unnecessary, the use of other solvents and aromatics which may impart undesirable odors to end products. And because this superior synergist is an ether, butoxide is stable to the action of other chemical agents and exposure conditions—such as, heat, light and atmospheric changes.

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Pyrenone





Chemical Divisions

ONIO-APEX Plasticisers and Chemicals WESTYACO CHIOR-ALMALI Alkalis, Chlorinated Chemicals, Carbon Bisulfide FAIRFIELD CHEMICAL Insecticides and Organic Chemicals
MARARA CHEMICAL Insecticides, Fungicides and Industrial Sulphur BECCO CHEMICAL Peroxygen Chemicals
WESTYACO MINERAL PRODUCTS Phosphates, Barium and Magnesium Chemicals

Para in Garment Bags

(From Page 124)

about five days (graphically, the vaporization rates are straight lines), the vapor concentrations given below were estimated from the average rates for that period.

When the dosage was 100 gm. of PDB, Ce = 16.2 mgm./1.; K = 225 mgm./hr.; Y (least effective bag) = 208 mgm./hr.; Y (most effective bag) = 192 mgm./hr.; k = K/Ce = 225/16.2 = 13.9/hr. Cy = K - Y = (least

effective bag) 225 - 208 = 1.2 13.9

mgm./1. (most effective bag)

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225 - 192 = 2.4 mgm./1

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When dosage was 200 gm. PDB, Ce = 16.2 mgm./1.; K = 429 mgm./hr.; Y (least effective bag) = 383 mgm./hr.; Y (most effective bag) = 346 mgm./1. k = 26.5/hr.

Cy (least effective bag) = 1.7 mgm./1.; (most effective bag), = 3.1 mgm./1.

When dosage was 300 gm. PDB, Ce = 16.2 mgm./1.; K = 908 mgm./hr.; Y (least effective bag) = 679 mgm./hr.; Y (most effective bag) = 563 mgm./1. k = 56.0/hr.

Cy (least effective bag) = 4.1 mgm:/1.; (most effective bag) = 6.2 mgm./1.

Although the assumption of a constant exposed surface of PDB is not correct, loss of surface area is negligible in the airtight containers and apparently is not a critical factor at these dosages in the plastic bags until about the fifth day. Presumably the introduced error is not large. The assumption that there is equal distribution of the vapors is permissible for containers of this size where the crystals are suspended at the top. This was demonstrated by the relatively

constant insect mortality at the three levels in the bags.

Although they may be considered only as approximations, the estimated vapor concentrations permit a clearer interpretation of the dosage-mortality relationships in the bags. The vapor concentration in the most effective bag, although less than 50 per cent of saturation, was almost twice as great as that in the least effective bag. The difference is highly important in terms of insect mortality due to the critical relationship between dosage and mortality within the range of concentrations that developed in the bags.(1)

Dosages Required for Seasonal Storage.—Insect mortalities during month-long exposures in garment bags at various dosages of PDB were as follows:—

Least effective bag:

400 Dosage 200 300 Mortality, per cent 55 70 Most effective bag: 300 400 Dosage, gm. 200 100 Mortality, per cent 50 68 In all cases the PDB was entirely dissipated during the month and the insects that survived were active.

Conclusions

UNDER certain conditions of dosage and exposure, the majority of plastic garment bags may serve as fumigation chambers for the control of insect garment pests with PDB. However, the effectiveness of different bags varies considerably and it is difficult to prescribe a single procedure for effective use that is adequate for the poorer bags and not excessive for those of better quality.

The variation in effectiveness of the bags as fumigation chambers is largely due to variation in permeability of the plastic films to PDB vapors. Permeability to these vapors is a fundamental property of the material and not simply a physical feature related directly to film thickness, although the latter is also involved. Even in the well-constructed, relatively expensive plastic bags, vapor loss is sufficiently great to prevent the

development of high vapor concentrations under practical conditions. Although the vapor concentrations that develop in most bags are high enough to cause larvae of the black carpet beetle to cease feeding (unpublished data), kill a large portion of the larvae in a week, and destroy all insects during longer exposures, they are not maintained for adequate periods by a single practicable dosage. Insects that survive the single exposure resume feeding when the vapors are dissipated. Consequently, the supply of crystals must be renewed periodically for complete protection. although in practice one or two renewals at weekly intervals should generally suffice. The bag itself is presumed to be an adequate barrier against subsequent insect attack.

Although many of the plastic bags now available are adequate fumigation chambers when used with discretion, none of those tested may be termed efficient and only those constructed of 0.008-gauge vinyl film may be considered satisfactory for eradicating carpet beetle larvae if the PDB supply is not continuously replaced. Presumably all but the flimsiest bags would be satisfactory chambers for eradicating clothes moths if an adequate amount of PDB were used, because of the comparatively high sensitivity of that species to the vapors. Similarly, most bags might be used for carpet beetle control provided an adequate amount of PDB was maintained in them over a long period.

PDB has obvious advantages over more toxic materials for household use as a fumigant and it is effective against insect garment pests if its vapors are confined. Since the present plastic garment bags do not confine the vapors efficiently and it is impractical to recommend excessive amounts of PDB, the logical solution to the problem is to construct the bags from materials that are reasonably impermeable to the vapors. Several new synthetic resin compounds are much less permeable to PDB vapors than those now used in garment bag



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construction. Although some are probably not satisfactory in other respects for this purpose, others apparently are highly suitable. One type that was recently developed specifically for use in garment bags was only about half as permeable to PDB vapors as the best of those reported here. Apparently a demand for a satisfactory film by garment bag manufacturers can be met by the producers of plastics. It is suggested that certain minimum limits of plastic permeability as well as minimum dosages of PDB be determined and required before claims for insect control are considered.

The results of this investigation with plastic bags may be interpreted for practical purposes as follows:

1. For use as fumigation chambers with PDB, bags should be well constructed of film not less than 0.003 in. thick for clothes moth control nor less than 0.008 in. thick for clothes moth and carpet beetle control. Best results may be expected if the film is finely embossed and pigmented and if the zipper is secured in plastic tape and the grommets are of heat-sealed plastic.

2. PDB crystals, used at a minimum rate of one pound per 10 cu. ft. of bag volume (approx. 12 oz. in a 7.6 cu. ft. bag), should be suspended at the top of the bag in a cylindrical mesh container. A cylindrical container with fine crystals exposes a maximum surface for vaporization. Crystals should not be placed on the floor of the bag; aside from the low position retarding vapor movement, the PDB may react with the plastic film, softening it.

Clothing should be loosely separated in the bag to permit vapor penetration.

4. To eradicate clothes moths, the bag should remain closed for at least one week.

5. To eradicate carpet beetles, the 0.008-gauge bag should remain closed for at least 10 days. Preferably the bag should remain closed for two weeks, the PDB supply being replenished at the end

of the first five days. With bags made from less than 0.008-gauge film the PDB supply should be replenished at weekly intervals for several weeks.

6. The bags should remain closed when not in use to prevent entrance of insects.

Acknowledgment

Sincere thanks are extended to Dr. R. C. Turner, Soil Chemistry Unit, Chemistry Division, Science Service, Ottawa, for assistance in estimating vapor concentrations from the vaporization-rate data.

Literature Cited

 Arnold, J. W. 1953. Para and naphthalene as closet fumigants. Soap and San. Chem. XXIX (8): 2-7.

Roark, R. C. & Nelson, O. A. 1929.
 Maximum weights of various fumigants which can exist in vapor form a 1,000 cubic foot fumigating chamber. J. Econ. Ent. 22: 381-387.

World Glycerine Outlook

(From Page 47)

stability of supply, which now seems assured, and proper economic levels are reached.

If production in this country reaches a point where it exceeds demand, there are many who believe we could find export outlets for refined glycerine. To a very limited extent I agree, but the tariff barriers are high in most places and very likely we will face the stiffest sort of competition from other large refining centers. On the other hand, crude could be exported and be as competitive, economically, as the situation warrants.

My opinion has been asked about the future price trend, world-wide. In this regard I can merely refer you to glycerine history, which shows that every ten years, starting with 1926, those years ending with a six have been most interesting and exciting. This being 1956, history could repeat, but now we have synthetic detergents and an entirely different set of circumstances than ever before.

When ethylene glycol made its appearance in the mid-twenties and when other poly-alcohols came along later, many of us were apprehensive producers living amicably together, looking forward to the development of greater markets—for nothing takes the place of glycerine.

Alter Advtg. Claims

Claims for three insecticidal products have recently been modified in accordance with stipulations entered into with the Federal Trade Commission. Odor-Aire, Inc., Wichita, Kans., has agreed not to represent that its "Odor-Aire Roach Block" is effective in killing roaches or other insects except in a closely confined area. The stipulation generally provides that the firm will not "otherwise (claim) a greater effectiveness than is possessed by the product."

Another agreement provides that Leonard Carlson, trading as Sunset House, Hollywood, Calif., will not represent that his product "Clean House Anti-Insect Cones" is effective in killing bedbugs or moths (except flying moths), or will rid the home of insects. This product, also sold under the brand name "Bug Rid Anti-Insect Cones" has been advertised as a means to "rid your home of insects . . . amazing new bug killer cones rid your home of all insect pests . . . 'Clean House Anti-Insect Cones' kill moths . . . bedbugs."

"Clean House Cones" were the subject of another FTC stipulation providing that Leon and Marcus Rosenfeld, St. Louis, Mo., will not represent that their insecticidal product of that name will rid the house of insects or is effective in barns or other spacious or open buildings. These partners, doing business as L & M Co., Bug Kill Co., Bug-Rid Co., Kill-Bug Co., and Magic Cone Co., also agreed not to exaggerate their product's effectiveness in any other way. The pesticide is also marketed under the names "Clean House Fumigation Cones" and "Magic Anti-Insect Cones."

All three stipulations are for settlement purposes only and do not constitute an admission by the parties that they have violated the law.





"shoo fly" magic!

Flies don't bother cattle protected with Sprays based on CRAG Fly Repellent* and...

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emulsified with EMCOL H-145

Contented fly-free cows and other livestock mean more milk and meat for the dairyman, rancher, farmer. Flies really stay away when CRAG Fly Repellent works its "shoo fly" magic.

EMCOL H-145...a tailor made emulsifier... is the secret for improved spontaneity and stability in CRAG Fly Repellent Formulations F-21 and F-10P.

EMCOL H-145 is another example of Emulsol's cooperative research with basic pesticide manufacturers.

> *CRAG Fly Repellent manufactured by Carbide & Carbon Chemicals Company CRAG is a registered trademark of Union Carbide & Carbon Corporation

For further technical information, contact your local Emulsol representative, or write direct

59 EAST MADISON STREET . CHICAGO 3, ILLINOIS, U.S.A.

News

Flatow West Sales Manager

William Flatow, Jr., has been appointed general sales manager of the West Disinfecting Co.,



William Flatow, Ir.

Long Island City, N. Y., succeeding John A. Manley who continues as executive vice-president with the company. Mr. Flatow was formerly assistant general sales manager and prior to that advertising manager for West. He has been with the firm since 1937. In September, 1955, he was elected assistant secretary.

West Disinfecting maintains a sales staff of 400 representatives in principal cities in the U. S. and Canada. Its promotional efforts have been chiefly in the industrial and institutional sanitation fields, although it also produces two well-known retail products, "CN" and "Westpine" disinfectants. This year the company will celebrate its 75th anniversary in business.

Barger Chemicals Formed

Barger Chemicals, Inc. has recently been formed with offices and plant at 708½ Main St., Norwalk, Conn. Dr. Edwin I. Stoltz is president of the new company which will manufacture a line of sanitary products including detergent-sanitizer, liquid detergent concentrate, quaternary disinfectant, germicides, sanitizers and an algi-

cide concentrate. At the beginning, Dr. Stoltz plans to service chiefly the New England market, Barger products will be sold wholly through jobbers and distributors.

O-Cedar Names Varchetta

O-Cedar Division, American-Marietta Co., Chicago maker of polishes, recently named F. R. Varchetta as advertising and sales promotion manager.

Holcomb Canadian Plant

J. I. Holcomb Mfg. Co., Indianapolis, opened a new Canadian plant at Toronto on Feb. 1, it was announced recently by M. P. Speakman, vice-president of Holcomb. The plant is located at 890 Caledonia Road, Toronto, Ontario, and will be managed by Bert Picavet.

Hall to Olin Mathieson

The appointment of J. Newton Hall as western manager of the insecticide division of Olin Mathieson Chemical Corp., Baltimore, was announced recently by Robert Zipse, general manager of the division. Prior to joining Olin Mathieson, Mr. Hall was vice-president of Pioneer Chemical Associates, Denver, since 1952. Earlier he has been vice-president in charge of sales for Julius Hyman & Co., Denver, and was

J. Newton Hall



with Velsicol Chemical Corp., Chicago. Mr. Hall will make his headquarters in Denver.

Velsicol Advances Lucas

Edward B. Lukas has been appointed as technical service representative of Velsicol Chemical



Edward B. Lukas

Corp., Chicago, it was announced recently by John F. Kirk, vice-president and director of sales of Velsicol. Mr. Lucas will make his headquarters in Chicago and will work under the direction of Andrew Schor, industrial division sales manager. He first joined the firm in 1948 and comes to his new post from Velsicol Resin Laboratories.

Sodergreen Retires

Axel L. Sodergreen, assistant chief chemist of West Disinfecting Co., Long Island City, retired February 1. He had been associated with West for the past eighteen years. He was active in the Chemical Specialties Manufacturers Association, especially in floor waxes and kindred matters. Mr. Sodergreen will continue active in chemical consulting and part time work. He resides at Bayville Road, Locust Valley, N. Y.

Cary Mig. Relocates

Cary Mfg. Co., manufacturing chemists, recently moved to new and larger quarters at 2910 "J" Ave., National City, Calif. The firm formerly was located in San Diego.

Robitschek Onyx Pres.

F. O. Robitschek has been named president and chief executive officer of Onyx Oil & Chemi-



F. O. Robitschek

cal Co., Jersey City, N.J., it was announced recently. He is former general merchandise manager of the soap sales division of Colgate Palmolive Co., Jersey City, N.J. He had been with Colgate since 1946 serving as head of the merchandising and sales department of synthetic detergents to consumers and as brand manager in charge of "Vel", "Cashmere Bouquet" toilet soap, "Ajax" scouring cleanser and "Super Suds".

While attending Marietta College and following his graduation in 1935 with a major in organic chemistry, Mr. Robitschek was employed by Marietta Dyestuffs Co., Marietta, O. Just prior to his executive assignments with Colgate, Mr. Robitschek was sent to Germany in 1945 by the Technical Intelligence Commission of the U.S. Department of Commerce to study the German dyestuffs industry. His findings were later published as the "Robitschek Dyestuffs Report." In 1944, Mr. Robitschek served in Washington as an administrator with the Chemicals Bureau of the War Production Board. His responsibilities included synthetic detergents, fatty acids and alcohols, amino compounds and aldehyde derivatives.

He is a member of The Chemists' Club of New York, the American Chemical Society and the Sales Executives Club of New York.

ESA Elects Officers

B. A. Porter, U. S. Department of Agriculture, was elected president of the Entomological Society of America for 1956 during the group's recent convention at the Netherlands Plaza Hotel, Cincinnati. Other officers appointed at the meetting include: H. M. Armitage, California Department of Agriculture, president-elect; R. H. Nelson, executive secretary; and C. P. Clausen, Citrus Experiment Station, Riverside, Calif., and Fred Fletcher, Dow Chemical Co., Midland, Mich., members of the board.

Huntington Booklet

Huntington Laboratories, Inc., Huntington, Ind., recently published a new cartoon booklet titled, "A Janitor's Lament." The book lampoons the public as well as custodian employers in their daily contacts with custodians. Copies are available on request to Huntington Laboratories, Inc., Huntington, Ind.

Poisons and Antidotes

A 20-page booklet on "Common Household Poisons and Their Antidotes" was recently published by the Connecticut State Department of Health. It is a reprint from the Connecticut Health Bulletin of July, 1955. The booklet points out that the rate of fatal accidents from accidental poisonings is increasing due to the wider use of potentially toxic chemicals in the household. It states that attempts have been made to compile information useful to physicians in an emergency, that all are useful, but none complete.

The booklet lists some 450 chemical compounds by trade name, gives the poisonous ingredient and then tabulates the antidotes. The author states that the list is "a very small fraction of the total of chemical preparations on the market," but he considers it representative. In the opinion of experts who have examined the booklet, some of the antidotes given are incorrect and non-poisonous products are included. Also the booklet contains the names of products which have been off the market for some time.

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New Reily Reps.

The formation of a new sales agency, James & Cooper Co., 2323 Gardenia Drive, Houston, Tex. was announced recently. The new firm, formed by Robert Cooper and Robert James, will represent Reily Chemical Co., New Orleans, on its line of waxes, disinfectants and soaps in Texas and Oklahoma.





Mr. James is covering south and central Texas, and Mr. Cooper is in charge of the Dallas Office at 4924 Greenville Ave. He is covering north and west Texas and Oklahoma. Both men were formerly connected with A. T. Powell Co., Dallas, which has retired from the agency business and turned over all its accounts to James & Cooper.

Robert James



SOAP and CHEMICAL SPECIALTIES

To Dow Sales Training

Preston C. McCutcheon, sales supervisor of dry cleaning solvents for the Dow Chemical Co.,





P. C. McCutcheon

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C. C. Castle

Midland, Mich. since 1943, has been appointed to a new position in the company's sales training program, according to Donald Williams, vicepresident and director of sales. Carl C. Castle, on the Dow organic chemicals sales staff for the past three years will succeed Mr. Mc-Cutcheon. Mr. McCutcheon's appointment is in line with the company's program to expand and intensify its sales training activities. With Dow since 1937, his new work will include the selection and training of men prior to entering the sales field and also a continuing program for on the job training and field assistance in sales and sales promotion.

C. W. Kavanagh Dies

Charles William Kavanagh, 33, general manager of Oil Specialties & Refining Corp., Brooklyn, died of a heart attack at his home in Whippany, N. J., Jan. 24. He joined Oil Specialties & Refining Co. in 1948 after serving in the Armed Forces in Europe during World War II. Mr. Kavanagh received shrapnel wounds in the chest and arms during the invasion of Normandy as he and another soldier were setting up communications on the beach. He was a communications man with Headquarters Co. of the 12th Infantry Battalion. He later fought in the Battle of the Bulge

Mr. Kavanagh is survived by his wife, Mrs. Lillian Kavanagh; a son, Richard; a daughter Cathleen, and his mother, Mrs. Gertrude Crockett, and his stepfather, R. J. Crockett, Sr., of Maplewood, a partner in Oil Specialties & Refining Co.

Maintenance Show Dates

The First International Sanitation Maintenance Show and Conference sponsored by the Industrial Sanitation Management Association, the Association of Food Industry Sanitarians, and the National Association of Bakery Sanitarians has been announced by William S. Orkin, managing director of Orkin Expositions Management, New York. The show and conference will be held at the New York Coliseum, October 14th to 16th, 1956.

According to Mr. Orkin, tentative subjects to be covered in the conference program panel discussions and forum are: (1) "The Elements of Industrial and Institutional Sanitation," which will include structural maintenance, cleaning maintenance, pest control, safety and industrial hygiene and personnel facilities; (2) "Mutual Aid in Purchasing Sanitation Supplies"; (3) "Analysis of Sanitation Labor Costs"; and (4) "Mechanical Aids to Sanitation Maintenance", which will include power machines, industrial washing equipment and elevated work platforms.

J. Lloyd Barron, manager of the sanitation department of National Biscuit Co., New York, is chairman of the program committee for the conference. Also on the committee are Albert J. Burner, supervisor of cleaning standards for the central maintenance division of the Port of New York Authority and Sydney Brierly, assistant department head of inside cleaning, Eastman Kodak Co., Rochester.

New Huber Division

The appointment of Ralph R. Browning, Jr., as manager of its newly formed sales division to service the insecticide industry and others was announced recently by J. M. Huber Corp., Brooklyn. The new sales unit will be known as the General Industries Division.

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Three Hooker Changes

Three promotions in the advertising department of Hooker Electrochemical Co., Niagara Falls,





C. Simmons

A. Chinnock

N. Y. were recently announced by Robert E. Wilkin, vice-president and director of sales. Clark R. Simmons was named advertising manager, A. Vaughan Chinnock was named assistant advertising manager — chemicals and Wallace H. Kinz was named assistant advertising manager — plastics.

In December, 1937, Mr. Simmons joined Durez Plastics and



W. H. Kinz

Chemicals, Inc., North Tonawanda, N. Y. as assistant advertising manager, becoming advertising manager in 1955. When Durez was merged into Hooker in April, 1955, he became advertising manager of the Durez Plastics Division.

Mr. Chinnock joined Hooker in 1941 as an operator in the research department. In 1944, he joined the sales department handling technical correspondence and literature, advertising, and general publicity. He ceased handling editorial publicity when a formal public relations department was organized in 1953.

Mr. Kinz joined Durez Plastics in 1953 as editor of the internal and external publications, continuing in that capacity for the Durez Plastics Division of Hooker.

The World-Famed Lilacs Bloom Again

Heiko Perfume and Cosmetic Compounds are once more available to fine perfumers.

Heine and Company has again begun to produce the quality specialties so highly prized and widely known for their unsurpassed excellence the world over.

Heine and Company is resuming full production. Mr. Frederick C. Keidel, long distinguished in the field, will be Chief Perfumer, assisted by a staff of competent perfumers and chemists. Mr. Chester Tompkins will be in charge of sales.

Now you may order superb:

Heiko-Lilac "A"

Oil of Lilac known around the world as an indispensable base for modern perfumes with the natural odor of fresh flowers.

Heiko-Jasminette White

Most widely used in cosmetic compositions.

Heiko-Pink

Respected for its retentive power, and highly recommended for all carnation compositions.

Your welcome inquiries for samples of all inimitable Heiko flower products, aromatic chemicals, and essential oils will receive our interested, prompt attention. Please let us help you meet your finest quality requirements in every detail.







NACA Spring Meeting

The safety program of the National Agricultural Chemicals Association will be highlighted at the group's 1956 spring meeting to be held March 14 through 16 at the Hollywood Beach Hotel, Hollywood, Fla. "Read the Label for Safety," the association's theme for its safety program, will be featured in a report on how the program has been expanded.

John A. Field, Carbide and Carbon Chemicals Co., New York, will address the meeting on the development and marketing of pesticides following an official welcome to members by president W. W. Allen, Dow Chemical Co., Midland, Mich. A talk on pesticide research will be delivered by H. L. Haller, U. S. Department of Agriculture. George P. Larrick, Food and Drug Administration, is scheduled to present a review of "Fifty Years of Food and Drug Laws" and G. L. McNew, Boyce Thompson Institute, Yonkers, N. Y., will address the meeting on the status and future of fungicides.

Simoniz' Doran Resigns

Jack Doran resigned recently as director of advertising and sales promotion for Simoniz Co., Chicago.

Onyx Advances Mason

The advancement of William B. Mason, former Cleveland sales representative, to district manager

William B. Mason



of its Chicago office, was announced recently by Onyx Oil & Chemical Co., Jersey City, N.J. Mr. Mason, who has been with Onyx since Nov., 1948, continues to serve his present territory under the jurisdiction of the Chicago office.

Lee Burnham Dies

Lee Burnham, Iowa sales representative of the Beacon Wax Co., Boston, died Jan. 15 at his home in Lee's Summit, Mo. He was 65.

New Paramount Plant

Paramount Chemical Co., Columbus, Ga., manufacturer of floor maintenance and sanitary supplies, has moved into new and enlarged headquarters that contain offices, a showroom and warehouse and manufacturing facilities, it was announced recently by William Pope, manager of Paramount. The firm's new plant is a single level brick structure at 2078 Philips St., Columbus.



SELECTING AN OUTSIDE SOURCE FOR RESEARCH

Here's an edited list of some of the research and development studies we have conducted recently.

It indicates the employment of an outside laboratory may be less expensive and more expeditious in increasing your competitive edge.

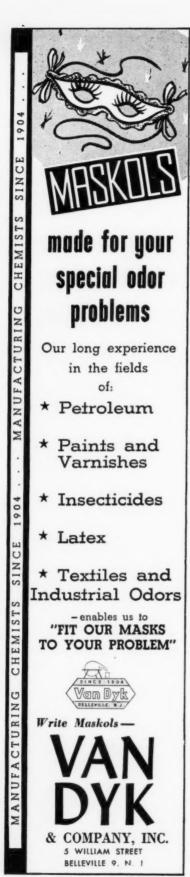
- 1. Development of an improved wax for cartons.
- 2. Study of wash compositions for brightening nylon.
- 3. Research on deicing fluids.
- 4. Utilization of storage facility in limestone mines.
- 5. Developing new uses for urea.
- 6. Performance tests on a new type adhesive.
- 7. Research on riboflavin retention in wrapped bakery products.
- 8. Test on vinyl-coated fabrics.
- 9. Dip coating studies on wood furniture.
- 10. Haze formation problems on body surfaces of automobiles.
- 11. Toxicological test on floor tile.
- 12. Market report on a special alcohol.
- 13. An air pollution survey in metropolitan New York.
- 14. Development of a new chemical specialty.

The above merely indicates some of our scientific research activities. To ascertain how this outside laboratory may be of help to you, we invite you to inquire without cost or obligation.

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New Poison Book

A new poison encyclopedia entitled "Clinical Toxicology of Commercial Products" will be published June 1 this year by Williams & Wilkins Co., Baltimore, The book, designed for use by physicians to prevent accidental death by poisoning, is being compiled by the University of Rochester School of Medicine and Dentistry. Over 15, 000 household and industrial chemicals and drugs will be listed together with a description of uses, main ingredients, toxicity rating and degree of damage to be expected when accidentally swallowed.

Dr. Harold C. Hodge, chairman of the Division of Pharmacology and Toxicology, assisted by Mrs. Marion Gleason, research assistant, and Dr. Robert E. Gosselin, Assistant Professor of Pharmacology, are collaborating in compiling the new book. Dr. Hodge pointed out that there are 1,500 deaths and 15,000 disabilities a year in the U.S. from accidental poisonings. The book is designed to give practicing physicians quick reference information and first aid and general emergency treatment. A complete list of manufacturers' names and addresses is included so that the doctor may call or wire for additional information. Many manufacturers have cooperated in compilation of the new encyclopedia.

Marvinny Opens Lab

John J. Marvinny recently announced the opening of an office and laboratory at 371 Wayne St., Jersey City, N. J., for consultation and analysis on oils, fats and waxes. He had formerly been associated with Frank B. Ross Co., Jersey City.

Mantrose Buys Attleboro

Mantrose Corp., Brooklyn, N. Y. manufacturer and bleacher of shellac, has acquired the Attleboro Mfg. Corp., Attleboro, Mass., it was announced recently by M. A. Rosen, president of Mantrose. Mr. Rosen also announced that the executive and sales staff of Dings & Schuster, Inc., New York shellac

brokers have become affiliated with Mantrose.

Witco Appoints Schwarze

Witco Chemical Co., New York, has named Edwin H. Schwarze as technical service representative of its Pioneer Products Division, it was announced recently by J. J. Tumpeer, senior vicepresident of Witco. Mr. Schwarze formerly was chief chemist of Mitchell Rand Insulation Co., New York, and also was associated with J. Kayser and Co., Brooklyn, N. Y.

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Schenectady Expands

One of the largest stainless steel autoclaves ever built is being installed in one of the plants of Schenectady Resins, Division of Schenectady Varnish Co., Schenectady, N. Y. Installation of the kettle, which has 8,000 gallon capacity, is part of the organization's over-all program to expand production of terpene, alkyd, phenolic and other synthetic resins.

Nitroparaffin Symposium

More than 150 representatives of mid-west industries attended a recent panel discussion by research scientists and product development executives which was held at the Congress Hotel in Chicago. Sponsored by Commercial Solvents Corp., New York, the symposium covered findings by various companies on the use of nitroparaffins and derivatives in improving manufacturing processes and developing new products.

Among the results reported at the meeting were new long-lasting high gloss waxes. These waxes, which do not require rubbing or polishing, result from the use of a nitro-paraffin derivative, aminomethyl-propanol, commonly referred to as AMP. Robert T. Means, technical sales and service engineer of Petrolite Corp., Kilgore, Tex., also stated that AMP is highly effective as an emulsifying agent in combining the basic ingredients required for high gloss and stability in waxes designed for industrial as well as home use.

SOAP and CHEMICAL SPECIALTIES

Open New Kenya Pyrethrum Laboratories

THE opening of a new \$100,000 laboratory for pure research in pyrethrum in Nakuru, Kenya Colony, British East Africa, heart of the world's main production center. was announced recently by African Pyrethrum Development, Inc., New York. The new laboratory, supported by the Pyrethrum Board of Kenya, the producers' association, will do fundamental research on pyrethrum, the daisy-like flower which contains the active ingredients, known as pyrethrins, which are used widely in insecticides because of their knockdown power against all pore-breathing insects. Fundamental questions to be studied about pyrethrum include:

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1.) What is its basis?

2.) What breeding means can be used to increase the pyrethrin content of the flowers which are necessarily expensive to grow and harvest by hand?

3.) How can flower volume be increased with full preservation of the pyrethrin content?

4.) How can the breeding of new strains be used to improve the biological activity of the plant?

It is estimated that in 1956 American processors and consumers of pyrethrum will use about 100, 000 pounds of pyrethrins, or 65 percent of world production—centered largely in Africa — and are expected to require by 1960 some 200, 000 pounds. In addition to the Kenya Colony, pyrethrum growers are located in the Belgian Congo, Tanganyika and Uganda, Africa.

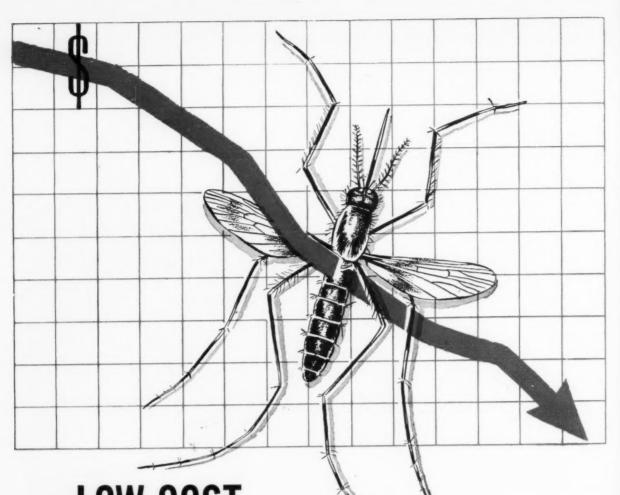
The governments of British East Africa and the Belgian Congo conduct great experimental stations in flower culture. Now the growers themselves are backing this permanent research into why the flower is what it is and how to improve it.

The large new laboratory in Kenya contains rooms with specially designed equipment and temperature and humidity-control machinery. The laboratory is staffed by experts from abroad as well as from Kenya's own research centers.

Laboratory workers ground flower samples taken immediately from current warehouse deliveries, with careful noting of strains and points of origin. Distilled extract is run through tests in its freshest Dr. John Fulong and John Hopkins in new Kenya pyrethrum laboratories. Center: Dr. Ulrick Kroll, left, agricultural officer of Dept. of Agriculture, shows new flowers to Norman H. Hardy, executive officer of Pyrethrum Board of Kenya. Bottom: Henry Willems, pioneer pyrethrum grower (left), shows current crop at Ruhengeri, Territory of Ruanda, to Oswald du Chasteleer, president of Societe Cooperative des Producit Agricales.

state with the assistance of new spectrophotometric equipment. In a separate wing, insects similar to those that infest America, Europe and the tropics are bred and used for experimental purposes in biological activity tests. In a matter of weeks, immediate results can be translated into field work, in cooperation with the Kenya Department of Agriculture.





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SOAP and CHEMICAL SPECIALTIES

Tilbury Acquires Firm

Tilbury Refining Corp., Brooklyn, N.Y., refiners of mineral and petroleum waxes, has acquired all stock shares in Wax Corp. of America and has merged with the latter firm, it was announced recently by Gilbert J. Tilbury, president. The merged companies will adopt the corporate name of Wax Corp. of America and will be located at 21-29 Dunham Place, Brooklyn 11, N. Y.

Dieldrin for Termites

A new booklet on Termite Control with Dieldrin has been issued by the Shell Chemical Corp. It outlines methods for detecting termites and shows with a series of illustrations the best methods for controlling them with Dieldrin. Three types of buildings are illustrated. Dosages per square foot are also explained. It also tells about the effectiveness of Dieldrin in long-time protection against termites. Copies available from Shell Chemical Corp., 380 Madison Ave., New York 17, N. Y.

New Hercules PE Plant

A new plant for the manufacture of pentaerythrito! (PE) is in course of construction by Her-

Robert W. Montgomery (below) was named recently as sales manager of Fritzsche Brothers, Inc., New York. He joined the perfuming materials firm in 1946 as a sales representative in the Philadelphia office and was transferred to New York in 1954 where he specialized in the solution of company sales problems. Mr. Montgomery is a veteran of three years active duty with the U. S. Naval Air Force.



cules Powder Co. at Louisiana, Missouri. It will be located on part of the property occupied by the company's Missouri Ammonia Works. The plant is expected to be completed by the end of 1956 with operations starting early in 1957, according to Joseph B. Talley, works manager. Production will be 24 million pounds of PE and 100 million pounds of formaldehyde annually. Anhydrous ammonia will continue to be produced at the Louisiana plant at a rate of 40,000 tons per year.

New PICCO Warehouse

Pennsylvania Industrial Chemical Corp., Clairton, Pa., recently opened a new warehouse in Cincinnati, the fourth one that the firm has opened within the past two months. PICCO earlier had established warehouses in Detroit, San Francisco and Los Angeles. The new warehouse in Cincinnati is located at 1440 West Eighth St. Robert D. Kinney has been appointed as representative to handle all products for sale and distribution in the Cincinnati area.

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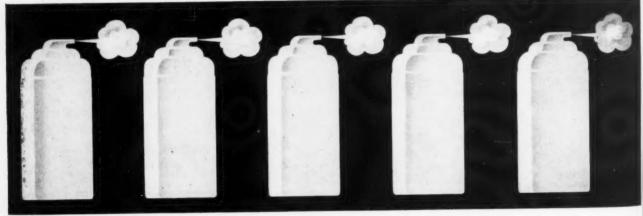
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Buys Whittemore Bros.

Whittemore Bros. Co., Fayette, Ala., manufacturer of shoe polishes, dyes, fabric cleaners and spot removers, was sold recently to Recipe Foods, Inc., Baltimore subsidiary of Childs Co., New York restaurant chain. Whittemore polishes are marketed under the "Cadet" and "Bostonian" labels. The main offices of Whittemore will be transferred to Baltimore but its plant will remain at Fayette.

New Lethane Booklet

Rohm & Haas Co., Philadelphia, has issued a new 12-page booklet on "Livestock and Barn Sprays Containing Lethane 384." The booklet outlines the chemical and physical properties of Lethane. gives figures on knockdown and kill tests by the Peet-Grady Method for various formulas containing Lethane and other ingredients, gives facts on safety and stability factors, and also gives information on labeling and registration. A specimen label for a Lethane and methoxychlor livestock spray is also given. Copies of the booklet are available from Agricultural and Sanitary Chemicals Department, Rohm & Haas Co., Washington Square, Philadelphia.

New Reily Floor Wax

Reily Chemical Co., New Orleans, recently introduced a new self-polishing floor wax called "Index Wax." The product is said to be waterproof and to dry within 15 minutes after application. Reily is presently offering "Index Wax" to new customers on a risk-free basis. The firm will prepay all freight charges on each order for five units of the five-gallon pails at the regular truckload price of \$1.80 per gallon. Reily Chemical Co. is located at P. O. Box 98, New Orleans 6.

Eastern PCA Conference

The sixteenth annual eastern Pest Control Operators Conference was held February 2nd through 4th at the University of Massachusetts, Amherst. The featured event of the meeting was a testimonial banquet for Professor A. I. Bourne, who will retire this year, after fifteen years service to the eastern association.

The meetings included discussions on rodent control problems, pest control problems following disasters, sanitation forum, and nature of resistance of insects.

Doig Joins Michigan

Arthur K. Doig has joined the organic research staff of the Michigan Chemical Co., St. Louis, Mich. He is a graduate of St. Lawrence University from which he also received his M.S. in 1949. Prior to joining Michigan Chemical, Mr. Doig was associated with Shulton, Inc., Clifton, N. J., in organic research.

Rodent Control Poster

Wisconsin Alumni Research Foundation, Madison, Wis., recently created a new educational poster for distribution to elevators, mills and other grain-handling businesses in the industry's current national program to control rats and mice. Theme of the poster is "Clean Grain Means More Money." Copy in the poster illustrates a three-step method of rodent control.

Single copies or quantities of the poster are available from the Educational Director, Wisconsin Alumni Research Foundation, P.O. Box 2217, Madison 1.



Hercules Shifts Three

Three changes in the syndepartment of Hercules thetics Powder Co., Wilmington, were announced recently by Henry A. Thouron, general manager of the department. Advanced were Harry F. Ahern, appointed director of operations of the synthetics department; John Z. Miller, who was appointed to the newly created post of manager of engineering; and Harold R. Monfort, who was appointed to succeed Mr. Ahern as manager of Hercules' Mansfield, Mass., plant.

In 1942, Mr. Ahern joined Hercules at the experiment station, where he worked in the pilot plant division. A year later he was transferred to the Mansfield pentaerythitol plant as supervisor, and in 1946 was appointed plant manager. Mr. Ahern will return to Wilmington in his new capacity. Mr. Miller joined Hercules in July, 1930, as a chemist at the company's experiment station, then located in Kenvil, N.J. In 1940, he joined the synthetics department as a chemical engineer.

Mr. Monfort joined Hercules in 1936 as a chemist at the experiment station. Shortly after the acquisition of the John D. Lewis resin plant in Mansfield in 1941, Mr. Monfort was appointed chief chemist at the plant. In 1943, he was named assistant to the superintendent, and in October, 1947, returned to Wilmington as technical assistant to the director of operations.

Seeks Fungicide Names

The Prevention of Deterioration Center of the National Research Council-National Academy of Sciences, Washington, D. C., is compiling a comprehensive list of industrial fungicides by chemical and trade names. In order to assure complete and authoritive coverage, the center is requesting all manufacturers of industrial fungicides to submit trade and chemical names of applicable materials. Agricultural and medical fungicides are not to be included in this listing.

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New Foundation Office

The Chicago office of the Wisconsin Alumni Research Foundation has been removed to 20 North Wacker Drive, Chicago 6, it was recently announced by Ward Ross, managing director of the association. The new telephone number is FInancial 6-3050.

Real-Kill Campaign

Real-Kill Insecticide, is holding a national contest offering a prize of \$25,000 for any household insect which the product cannot kill. The contest will start in June and last for 60 days, and offers \$20,000 in prizes for supermarket and grocery store managers in Southern California. The first drawing of this campaign for store managers took place on Feb. 6. Others will be held in June and October. Grand prize is \$1,500 in cash. The contest is based on stocking and reordering Real-Kill products with one vote for each case sold. Real-Kill, which is located in Kansas City, Mo., is headed by Ralph Martin, Sr., president. If there is no winner of the national \$25,000 contest, the money will go to a national charity. The company does an eight million dollar yearly business in household insecticides.

New Velsicol Film

A full-color, sound film entitled, "Goodbye, Mr. Roach" was recently released by the Velsicol Chemical Corp., Chicago, manufacturers of chlordane insecticides. The film, which runs approximately 10 minutes, deals with the life history and the control of cockroaches. The life cycle, including the laying of eggs, the hatching of new generations of roaches, how they enter the household, where they hide and how they come out in the dark to do their damage is fully covered.

The film was produced in collaboration with the Clemson College Extension Service at Clemson, S. C. Subject matter was supervised by entomologists of the Federal Extension Service and USDA extension entomologists from Virginia, North and South Carolina and

Georgia. A limited number of black and white or color copies are available on a free loan basis from Velsicol Chemical Corp.

New Parathion Facility

American Potash & Chemical Corp., Los Angeles, is adding new facilities at the Eston Chemicals plant in Los Angeles for the manufacture of technical parathion, according to a recent announcement by Peter Colefax, president. Output from the plant, which is scheduled to go into production in early 1956, will be solely for the company's needs and for the western requirements of California-Spray Chemical Corp., Richmond, Calif.

American Potash & Chemical Corp. had previously obtained parathion from outside sources for its production processes. Through its Eston division, it earlier had been one of the pioneers in the development of organo-phosphate insecticides and one of the original producers of parathion and TEPP in this country.

- * --

New Chemical Firm

Great Western Chemical Co., was formed recently in Seattle, Wash., by Carl F. Miller, president of Carl F. Miller and Co., Seattle chemical firm, and W. C. McCall, president of McCall Oil Co., Seattle. The new company will merge with the chemical and raw material divisions of Carl F. Miller and Co., and will maintain its main offices in Seattle. Branches and warehouses will be set up in Washington, Oregon and British Columbia.

Rohm & Haas Sales Up

Sales reported by Rohm & Haas Co., Philadelphia, for the year ended Dec. 31, 1955 amounted to \$161,664,000, compared with \$132,615,000 in 1954. The firm's sales and earnings in 1955 were the highest in its history. Net profit rose to \$17,687,000 or \$17.23 per common share as compared with \$12,431,000 or \$12.04 a share in 1954.

FMC Appoints Four

The Chemicals Division of Food Machinery and Chemical Corp., New York recently announced four appointments to its chemicals staff. Joseph Green has joined the staff of Food Machinery and Chemical Corp., chemicals division, central research laboratory. Formerly with U. S. Rubber Reclaiming Co., Buffalo, N. Y., Mr. Green is currently assigned to the Becco Chemical Division in Buffalo, pending completion of the FMC Chemicals research center at Princeton, N. J.

John Rivoire has been appointed to the development department of Westvaco Mineral Products Division in New York City. Formerly associated with Charles Pfizer & Co., Brooklyn, Mr. Rivoire will be manager of research.

R. M. Hoyer has been appointed district sales manager, Westvaco Chlor-Alkali Division, FMC, for the southern and Ohio Valley territory and has established his headquarters at Westvaco's South Charleston, W. Va., plant.

W. M. Clark will continue as southern sales representative under Mr. Hoyer with headquarters at the Charlotte, N. C., office of Westvaco Chlor-Alkali Division.

New Rice Bran Wax

A new high grade hard wax from rice bran in conjunction with solvent extraction of rice oil has been reported by the Southern Utilization Research Branch of the Agricultural Research Service, USDA. Bench scale production of the wax has already been carried out by research workers at the Southern Laboratory in New Orleans, the report stated.

Reporting that the wax appears similar to carnauba wax in quality, the announcement stated that hard, non-tacky waxes of a high melting point have been prepared by two variations of the filtration-extraction process. It was thought that the rice wax could be put to some of the uses that imported waxes are now used for.

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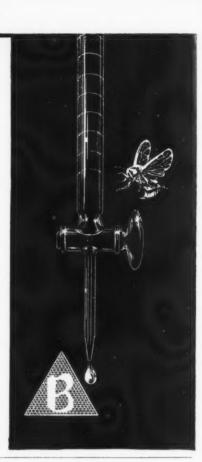
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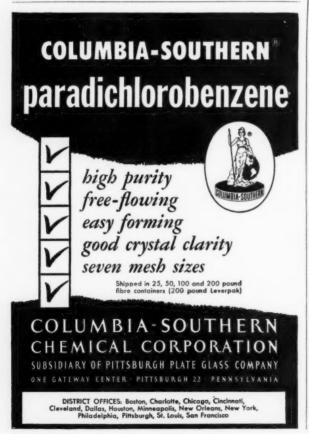
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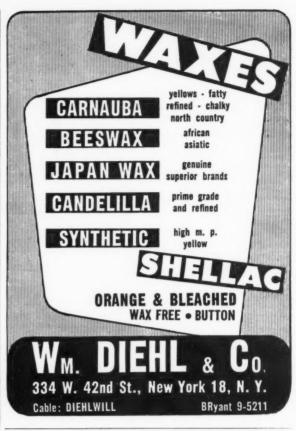
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Chemist, Ph.D. Development research & production. Over 7 years experience. Fatty acids, hydrogenation, soap and glycerine. Desire responsible position. Address Box 593, c/o Soap.

Sales Manager: Sanitary products and equipment. Has a record of 'know-how' for training new salesmen and helping others to increase their earnings in the sale of these products. Seeks a responsible job where these qualifications are appreciated. Presently employed but desire change to be with more aggressive firm. Address Box 596, c/o Soat.

Toilet Soap Expert: Man with 20 years experience in fine toilet soaps, complete manufacture; also laundry soaps and powders. Desires new position with progressive soaper. Can take full charge plant. For full details, write to Box 597, c/o Soap.

Expert Soap Man: Having long experience in the manufacture of all kinds of laundry and toilet soaps, and cleaning compounds. Glycerine recovery, and soap chemist. Address Box 598, c/o Soap.

Situations Wanted

Chemist: Development and research; production. Heavy laboratory and plant experience in wax formulations; household products; polishes; disinfectants; automotive chemical specialties and aerosols. Improve your products. Manufacture new ones. Desire responsible position. Address Box 599, c/o Soap.

Salesman: Chemical Raw Material Salesman. Degree. Experience selling to soap, sanitary, cosmetics and miscellaneous industries in Chicago area. Desires connection with a progressive organization. Address Box 600, c/o Soap.

Miscellanous

Wanted: Soap Plodder 8" or 10". Indicate condition, price, etc. Address Box 592, c/o Soap.

Distributorship: Canadian distributor of sanitary products is open to take on exclusive distributorship for American manufacturer. Present set-up includes 21 salesmen and 37 jobbers covering all of Canada for sanitary supplies and equipment sold to factories and institutions. Well established firm, 20 years in business. Send full details of proposition to F. T. Van Nest, Ontario Chemical Co., Ltd., 51 Clarkson Ave., Toronto 10, Ont., Canada.

For Sale: Small insecticide company. One of oldest and most respected names on West Coast. Opportunity for merchandiser to expand territory and items. Address Box 602, c/o Soap.

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Brand new Houchin Machinery Co. 10" combination soap plodder complete with 10 h.p. motor. Full specifications, price, picture available upon request. Priced below factory cost for quick disposal as original overseas purchaser unable to take delivery.

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For Sale: For the first time in History - 2 Lamson Carton Palletizers. Available for immediate inspection and prompt shipment, still erected as currently being used, two Lamson automatic "pallet loaders," latest design, as being used by Colgate-Palmolive (Jersey City, Kansas City, Jeffersonville plants), Lever Bros., Roman Cleanser Co., B. T. Babbitt, Anheuser-Busch, Ballantine, H. J. Heinze, Hershey Chocolate, Procter & Gamble, Esso, California-Hawaiian Sugar, Ralston Purina, Burger, Coors, Dow, Falstaff, Genesee, Iroquois, Liebmann, Lucky Lager, Maier, San Francisco, Simon, Erie, Fitzgerald, etc.; complete with A. C. motors, approx. 3 cartridges on each for different carton load, & with approx. 1400' belt conveyor & motor drives; can be purchased as complete installation or individual units at prices approx. 50% of new, offered subject to prior sale. Blueprints, details upon request. Option for inspection upon request also. Box 604, c/o Soap.

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For Sale

For Sale: Automatic weighing and filling equipment for dry materials. Triangle Model SBA Weigher, Conveyor and carton sealer complete with motors. Speeds to 18-25 cartons per minute. Equipment in excellent condition at fraction of replacement cost. Milner Products Company, Box 4465, Fondren Sta., Jackson, Mississippi.

Inventory Clearance Sale: Bargains — Conveyors — Portable belt boosters, stationery belt boosters, heavy duty belt conveyors, tapered roller curves, bottle conveyors, motors, etc. Write for list with prices and bulletins. Address Box 601, c/o Soap.

For Sale: By I. E. Newman, 5602 Blackstone Ave., Chicago, Ill. Crutchers 1000-8000 lbs.; Wrapper type S; Plodder 10"; auto. Table 2 way; Jones auto. Presses; 100-8000 lb. Powder mixers; Boilers; All kinds soap and chemical equipt.

For Sale Cheap: Swenson Evaporator. Single effect—2 catch-alls, with vacuum pump. Have been producing 150,000# better than 80% crude per year. Reason for selling—installed large one. Mt. Hood Soap Company, Portland, Oregon.

For Sale: Powder mixers, pulverizers, Hammermills, etc. Stainless steel jacketed kettles up to 1,300 gal.; Aluminum and stainless steel tanks—up to 10,000 gal. cap. Perry Equipment Corp., 1410 N. 6th St., Phila. 22, Pa.

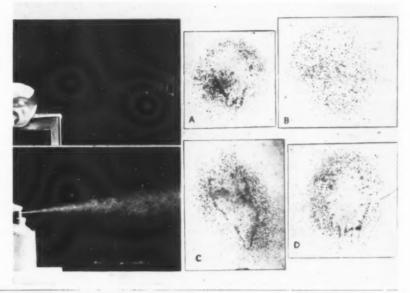
Now Available: 64 page listing of "Synthetic Detergents Up-to-Date" Latest revision. For further particulars write John W. Mc-Cutcheon, 475 Fifth Ave., N. Y. 17. For Sale: Houchin 4" Plodder. Allbright-Nell 4'x9' chilling rolls. Blanchard #14 soap powder mill. Lehmann 4-roll W.C. 12"x36" steel mill. Houchin 8½"x16" 3-roll and 18"x30" 4-roll Granite Stone mills. Kettles and tanks. Jones automatic soap presses. Empire State foot presses. Soap frames. Slabbers and cutting tables. Crutchers, Six-

knife chipper. Filter presses 12"x 42". Wrapping and sealing machines. Powder, paste and liquid mixers. Rotex sifters. Filling machines, grinders, hammer mills. Portable elec. agritators, pumps, etc. Send for bulletin. We buy your surplus equipment. Stein Equipment Company, 107 8th St., Brooklyn 15, N. Y. STerling 8-1944.

The first photographs to illustrate aerosol industry laboratory techniques have been made by G. Barr and Co., Chicago aerosol manufacturer who developed the pictured new laboratory methods for efficient study of aerosol spray patterns. In combination, these techniques afford a complete visual record of the spray pattern, thus facilitating efficient formulation of product for aerosol packaging.

Left — By means of high speed photography (1/10,000th of a second), the technician can "stop" the spray for observation of its general characteristics and measurement of the spray angle. Upper and lower left photos actually show spray particles in air. The upper photo shows a lighter spray than the lower.

Right — A dye technique permits close observation of the spray pattern on the sprayed surface. In this procedure, the aerosol product is sprayed on paper that has been brushed with a dye-and-talc mixture to record the spray pattern. Figures A, B, C and D show variations in spray characteristics, such as wetness, particle size distribution, and area of coverage. For example, A, C and D are relatively wet sprays, and B is dry and finer. These variations were obtained by using different types of glass bottle valves.



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Diamond Ups Polite

L. J. Polite, Jr., formerly sales manager for the agricultural chemicals division of Diamond Alkali Co., Cleveland, has been made product sales manager for a wide group of organic chemicals having wide industrial application. He succeeds W. B. Beeson, Jr., who was recently named manager of Diamond's New York-New England Branch sales office in New York City.

At the same time, Loren P. Scoville, general manager of the Chlorinated Products Division, has announced that John M. Kennady, manager of the Diamond Black Leaf Company, a Diamond Alkali affiliate, has been made sales manager of agricultural chemicals to succeed Polite. In his new job, Polite is responsible for sales of Chlorowax, chlorinated solvents, and chloromethanes which are produced at the company's Belle, W. Va. plant. Polite has been associated with Diamond for the past 14 years. Kennady joined Diamond three years ago via Kolker Chemical Co.

Aerosol History Oversight

In the article, "Ten Years of Aerosols," which appeared in the December, 1955, issue of Soap & Chemical Specialties, mention of the role played by Edward J. Helfer, then of Connecticut Chemical Research Corp., Bridgeport, was omitted. Mr. Helfer supervised the installation and operation of the first aerosol filling line of the company. Incidentally, he is now head of Pówr-Pak, Inc., Bridgeport contract packaging firm.

Lakritz Lands Sailfish

William Lakritz, president of Florasynth Laboratories, Inc., New York perfuming materials house, recently landed a 9 foot 4 inch, 91 pound sailfish. Fishing out of Acapulco, Mexico, on the boat "California," Mr. Lakritz landed the fish on January 14th. The catch was duly recorded in the "California Launch," official sailfish ledger, and certified at Acapulco. Reports indicate that the fish will



Armando Carranza (left), export manager and (right) William Lakritz, president of Florasynth Laboratories, with sailfish Mr. Lakritz caught while in Acapulco, Mexico.

grace the place of honor in Mr. Lakritz's office in New York, to match another big one he has in Chicago.

New Lever Detergent

(From Page 55)

"Wisk" carries the seals of approval of Good Housekeeping and Parents magazines. For stubborn dirt and stains the label calls for pouring a little on the soiled area and rubbing gently. Fabrics thus treated are then placed in the washing machine with the rest of the wash.

Aerosol Corrosion

(From Page 165)

As corrosion is usually associated with metallic couples or galvanic cells, indications of action may be obtained with a good oscilloscope. The internal resistance of a laboratory or radio type voltmeter varies with the type of meter from 10,000-20,000 ohms for D.C., which

will give no reading where little current is developed.

If corrosion is suspected but the effect has not become visible, analysis of the solution for the metals used in the container, container lining, or valve has given valuable information.

In one case where severe corrosion was being found in steel containers, the trace element was detected by means of x-ray diffraction.

An inexpensive bedside x-ray unit may be used to detect corrosion within containers. After the corrosion has started in the pores of the tin or lacquer lining, the pits will appear on the x-ray film as black spots.

For preliminary tests with your product the most satisfactory method is to cut long narrow strips from the container being tested and place them in a pressure test tube. When the test tube is filled with the test solution leave 1/3 of the metal strip exposed to the vapor phase. After several days the strips should be examined under a microscope to examine for action around the pin holes or under the lacquer lining. The aerosol solution should also be analyzed for traces of iron, tin or other elements if different coatings are used. If corrosion is found and your analysis does not detect the presence of the elements in the container, lining or solution, it is advisable to look for trace elements that might have been used in the processing of the containers or valve. Lubricants used in the dies for drawing the wire for springs have been found to accelerate corrosion.

If your laboratory equipment includes a good oscilloscope with a sensitivity of 0.025 volt connect the suspected components of the valves or containers as electrodes and determine the presence of any galvanic action.

In conclusion I would like to emphasize the importance of corrosion studies with aerosol products. The field of corrosion has not been emphasized in proportion to the losses.

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5. SYNTHETIC DETERGENTS

(445 pages)
by John W. McCutcheon

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Coming Meetings

American Oil Chemists' Society, 47th annual spring meeting, Shamrock Hotel, Houston, Texas, April 23-25.

American Society of Perfumers, symposium: Premarket Testing of Fragrances, Essex House, New York, afternoon of March 21.

Chemical Specialties Manufacturers Association, 42nd midyear meeting, Drake Hotel, Chicago, May 20-22. Ar

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Committee D-12 on Soaps and Detergents, annual meeting, Park Sheraton Hotel, New York, Mar. 19-20.

Entomological Society of America, annual meeting, Dec. 27-31, 1956, Hotel New Yorker, New York City.

Folding Paper Box Association of America, San Francisco, March 10-12.

National Agricultural Chemicals Assn., spring meeting, Hollywood Beach Hotel, Hollywood, Fla., March 14-16.

National Association of Retail Grocers, Los Angeles, June 10-14, 1956.

National Packaging Exposition of the American Management Association, Convention Hall, Atlantic City, N. J., Apr. 9-12.

National Premium Buyers Exposition, Navy Pier, Chicago, March 19-22.

National Sanitary Supply Assn., 33rd annual convention and trade show, Conrad Hilton Hotel, Chicago, Apr. 29, 30 and May 1-2.

Society of Cosmetic Chemists, semi-annual meeting, Biltmore Hotel, New York, May 18.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Feb. 7, March 13, April 12, outing at Skytop, Pa., May 16-18.

Toilet Goods Association, annual meeting, Waldorf-Astoria Hotel, New York, May 15-17.

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Eale Ends

THE bug world is agog at Cook Chemical's offer of \$25,000 for the person who finds a bug which their insecticide "Real Kill," will not kill. The Kansas City insecticide firm's advertising campaign has been picked up by columnists and news hawks everywhere. They're getting a million dollars worth of publicity. One group has organized the Indoor Bug Watching Society. Entomologists everywhere are scratching their noggins trying to think up a bug which might fill the bill. Come spring and warmer weather and there will be a lot of blokes all over the country out looking for that \$25,000 bug.

Russ Young, president of the Davies-Young Soap Co., of Dayton, Ohio, has returned as a member of the board of the Soap Association after an absence of several years. How well we remember his previous election some years ago when he sat on the dais at the annual soap banquet midst a sea of tuxedos clothed in a baggy tweed suit. His election took him by surprise and his tuxedo hung in a closet back in Dayton. This year he wore a tuxedo. Must have been tipped off.

A new Kentucky colonel, suh. None other than W. Newell Wyatt, otherwise known to his many friends as "Shorty," assistant director of sales for Shea Chemical Corp., Jeffersonville, Ind. It so happens that Mr. Wyatt spends a lot of his time selling phosphates across the river in Louisville, Ky., where, the story goes, his scintillating personality came to the attention of the Governor. In no time at all, he was a colonel.

This business of "awards of the year" just goes on and on, ad infinitum. But, we have a hunch that an award recently proposed by Ed Collins, prez of the Chemical Salesmen's Assn. in his inaugural address, is the award designed to end all awards-of-the-year. Ed proposes that chemical salesmen choose the Receptionist of the Year—probably the dame who has been kindest to chemical salesmen, maybe a dizzy blond, maybe not. Yes, gentle reader, we feel that Ed has something. Name your dame!

Poison centers, that is the places where they give out information on antidotes and other treatment to physicians in emergencies, seem to be something of one-way streets. It seems that when a manufacturer is called by a poison center to obtain emergency data about a product, the poison center will give out no information about the patient nor even the doctor's name. It seems unfair that the manufacturer is not given an opportunity to follow up the case and learn about its ultimate disposition.

Such could be of considerable help to the manufacturer in supplying future information to poison centers.

Do you know who was the originator of the Soil Bank Plan about which we hear so much from Washington these days? It was George L. Hochenyos of Kalusoff, Ltd., Springfield, Ill., makers of an athlete's foot control and other sanitary chemicals. According to Jim Wilson, owner of Kalusoff, Hochenyos took his Soil Bank Plan to the Isaac Walton League which then appointed a land use committee with him as chairman. Now the Washington politicians have picked up the soil bank idea and really are running with the ball. Everybody's getting into the act.

What color for a detergent package? Who knows? Nevertheless, Colgate is right now in the midst of trying new colors on the carton for "Ad," its low sudsing detergent. The carton has been colored red and yellow. Now, we hear, they are trying out a blue carton for the same product on the Coast. Apparently trying to find out which color is best on supermarket shelves. Incidentally, we hear that "Ad" has really caught on and is going great guns.

From the West Coast comes a scream from a housewife and mother of small children about floor wax television advertising. She objects to the commercials showing kids jumping around on pogo sticks and skating around the newly waxed floor. She states that her kids feel badly abused because she will not let them do these things and mark up her floors. They have her down as a mean mother and she doesn't like it. She wants other mothers to get after the wax people, just like she intends to do. Wax manufacturers, pull in your ears. Here comes trouble!

To celebrate its "diamond jubilec meeting," the Soap Association had its programs decorated with rhinestones to simulate diamonds. To attach these "diamonds" to each and every program was really a tough assignment. Each rhinestone was stapled on by hand and the Association crew knew they had done a job when they finished.

Correction: In this column last month we told about 532 blokes lining up at the recent CSMA convention to have their pictures taken with Miss America in the suite of "Fuld Chemical." This should have read Fluid Chemical. Fluid Chemical is over in Newark, N. J. No connection with the Fulds. Just a typographical error, but one of these embarrassing kind. Our apologies to Fluid!

Speed.



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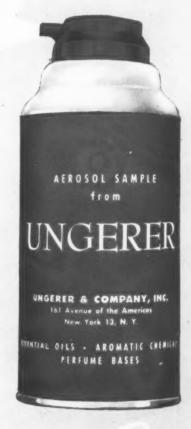
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